

Lower Duwamish Waterway Superfund Site Terminal 117 Early Action Area

TASK 1: SUMMARY OF EXISTING INFORMATION AND DATA GAPS ANALYSIS REPORT

Final

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Acronyms

ac	acre
AOC	administrative order on consent
AST	aboveground storage tank
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CLP	Contract Laboratory Program
CSL	cleanup screening level of Washington State Sediment Management Standards
су	cubic yards
DCWD1	Duwamish Commercial Waterway District No. 1
Ecology	Washington State Department of Ecology
EAA	Early Action Area
E&E	Ecology and Environment, Inc.
EPA	US Environmental Protection Agency
FS	feasibility study
HPAH	high-molecular-weight polycyclic aromatic hydrocarbon
LDW	Lower Duwamish Waterway
LDWG	Lower Duwamish Waterway Group

LPAH low-molecular-weight polycyclic aromatic hydrocarbon MHHW mean higher high water MLLW mean lower low water MTCA Model Toxics Control Act PAH polycyclic aromatic hydrocarbon PCB polychlorinated biphenyl PCT polychlorinated terphenyl
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PCB polychlorinated biphenyl PCT polychlorinated terphenyl
PCT polychlorinated terphenyl
r y r r r r
Port of Seattle
QA quality assurance
QA/QC quality assurance/quality control
QAPP quality assurance project plan
RI Remedial Investigation
RI/FS Remedial Investigation/Feasibility Study
RM river mile
SOW statement of work
SPCC spill prevention control and countermeasure
sediment quality standards of Washington State Sediment Management Standards
SVOC semivolatile organic compound
T-117 Port of Seattle Terminal 117
TBT tributyltin
TIC total inorganic carbon
TOC total organic carbon
TSCA Toxic Substances Control Act
USACE US Army Corps of Engineers
UST underground storage tank
volatile organic compound
Windward Environmental LLC

Executive Summary

This document describes the existing aquatic and upland information associated with the Terminal 117 (T-117) Early Action Area (EAA). The T-117 area is one of seven sites within the Lower Duwamish Waterway (LDW) Superfund site that were recommended to EPA and Washington State Department of Ecology (Ecology) for early cleanup actions because of their potential for higher levels of risk. The T-117 EAA generally consists of the intertidal zone, extending from the top of shoreline bank to the slope of the navigation channel. The extent of the boundaries are to be determined as part of this investigation. In addition to a review of upland and aquatic investigations, potential sources of contamination and data needs for complete characterization of the site are also presented in this report.

This report presents the results for aquatic environmental samples collected from the LDW within and in the vicinity of the T-117 EAA from 1990 to the present. Data collected during this time period include surface and subsurface sediment chemistry, porewater chemistry, fish tissue chemistry, and sediment bioassays. However, due to dredging events in the area, not all of the samples are considered representative of current conditions. The samples considered current include 27 surface samples (0-10 cm), 2 subsurface samples (0-2 ft and 2-4 ft), and 2 English sole tissue samples. The samples collected prior to dredging include 13 surface samples, 4 subsurface samples, 1 porewater sample, and 3 sediment bioassays. Sediment chemistry results for all current sediment samples were compared to the sediment management standards (SMS) sediment quality standard (SQS) and cleanup screening level (CSL) concentrations. Five surface sediment samples and one subsurface sample had PCB concentrations exceeding the CSL. Eight other surface sediment samples, all from the nearshore regions adjacent to and south of T-117, had PCB concentrations exceeding the SQS but not the CSL. PCBs were detected in English sole tissue at concentrations of 0.28 and 0.53 mg/kg.

Investigations from the adjacent upland property have focused on activities associated with the Malarkey Asphalt plant, formerly located on the present-day T-117 property. Much of the sampling data obtained during these studies are no longer representative of site conditions because of subsequent removal of soil and source materials. Chemicals detected in groundwater during the most recent monitoring event in 2003 included TPH compounds and PAHs; no PCBs were detected. Current groundwater contamination at the site adjacent to the shoreline is probably minimal, although no monitoring wells are located at adjacent properties of Basin Oil, South Park Marina, or Boeing to verify the absence of chemicals in those areas. PCBs and PAHs have been detected routinely in soil samples from the former Malarkey plant vicinity, but a soil removal action conducted in 1999 removed PCB-contaminated soil to a cleanup level of 25 mg/kg. Any soil still present at the site has been covered with fill or asphalt pavement. Asphalt material has been observed in the subsurface soil in the vicinity of

the former Malarkey plant and in the shoreline berm. The material is located above the saturated zone in the upland area and infiltration is minimized by the overlying asphalt cap.

Historical activities in the T-117 upland property associated with potential sources of contamination to the T-117 EAA include asphalt manufacturing operations and handling of PCB-contaminated waste oils at the Malarkey plant. Limited information was available on potential historical sources of contamination from Allied Bolt Company and A&B Barrel Company. Current activities identified as potential sources of contamination include: 1) storage of treated lumber at Port Construction Services as a minor source of TPH and PAH in runoff; 2) Basin Oil operations potentially resulting in unchecked spills entering storm drains, releases of oil materials not retained by the oil/water separator, and drippage from dismantled tanks and equipment, and 3) runoff from boat maintenance at South Park Marina. Stormwater discharges likely represent the greatest potential pathway for present-day releases of chemicals from upland areas to the LDW. Other possible pathways include groundwater discharge and erosion of shoreline berm materials into the intertidal zone.

The following data are proposed for collection in order to completely characterize the site:

- Chemical data for surface and subsurface soils, groundwater, seeps, LDW surface and subsurface sediment, and catch basin sediment to further characterize the nature and extent of contamination and potential sources of chemicals to the LDW
- Geotechnical data from soil borings and offshore sediment for engineering evaluation of remedial alternatives

Toxicity test and other methods of determining bioavailability may be performed based on sediment chemistry results. Other data needs identified that are proposed to be addressed as part of the LDW remedial investigation include habitat characterization (i.e., bathymetry survey to determine water depth and location of intertidal areas) and sediment fate and transport.

1.0 Introduction

The Terminal 117 (T-117) site has been identified as an early action area of the Lower Duwamish Waterway (LDW) Superfund site. The LDW site was added to the US Environmental Protection Agency's (EPA's) National Priorities List (the national list of sites for the Comprehensive Environmental Response, Compensation, and Liability Act, or CERCLA, also known as Superfund) on September 13, 2001. The Phase 1 remedial investigation (RI) for the LDW (Windward Environmental [Windward] 2003a) was a summary of existing LDW data from previous studies. One of the primary objectives of the Phase 1 RI was to identify areas within the LDW site that might be candidates for early cleanup action because of their potential for higher levels of risks. Windward (2003b) prepared a technical memorandum that recommended seven areas to EPA and Washington State Department of Ecology (Ecology) for early action. The T-117 Early Action Area (EAA) located at approximately River Mile (RM) 3.6 on the west side of the waterway (Figure 1-1), was designated as "Area 5" of the seven recommended areas.

Investigation of the T-117 EAA will be conducted under the existing Administrative Order on Consent (Cohen 2003) agreed to by the key parties involved in the RI and feasibility study (FS). The key parties include the City of Seattle, King County, the Port of Seattle (Port), and The Boeing Company – working together in the LDW as the Lower Duwamish Waterway Group (LDWG) – plus EPA and Ecology. Although all four members of LDWG are responsible for the LDW Superfund Site RI/FS documents, work at the T-117 EAA will be sponsored by only two of the four LDWG members: the Port of Seattle and the City of Seattle.

This document describes the existing information for the T-117 EAA and identifies data needs for complete characterization of the area. A summary of data for LDW sediment within the T-117 EAA is summarized from previous studies. The report also addresses known and potential contaminant sources and pathways in the adjacent upland area as part of the source control evaluation. This is an important part of the data summary, as it helps assure eventual control (if needed) of processes involved in sediment recontamination. Data gaps regarding upland sources and pathways are also identified for additional study. Potential pathways for sediment contamination from upland sources include stormwater runoff, bank erosion, and groundwater discharge.

The work plan for the T-117 EAA (Windward et al. 2003) defined three tasks. This document fulfills Task 1a of the work plan, summary of existing information and data gaps analysis. Organization of this document is as follows:

- **Section 2**—T-117 EAA and adjacent property descriptions, site history, and land use
- **Section 3**—physical and ecological characteristics



- Section 4—the nature and extent of aquatic and upland contamination in the vicinity of T-117 EAA, including a summary of existing sediment, porewater, and tissue data, and a summary of existing information on environmental investigations and cleanups on adjoining properties, including soil, surface water, and groundwater data
- ◆ **Section 5**—potential ongoing and historical sources of contamination, including a description of potential pathways for upland chemical migration to sediment
- ◆ **Section 6**—data needs that will be filled by the collection and analysis of field data
- ◆ **Section 7**—references

2.0 Site Background

This section describes site location features, history, and land uses for the T-117 EAA.

2.1 SITE DESCRIPTION

2.1.1 T-117 EAA

T-117 EAA is located on the west side of the LDW from approximately RM 3.5 to 3.7, as measured from the southern tip of Harbor Island (Figure 1-1). The area generally consists of the intertidal zone extending from the top of the shoreline bank (~ +10 ft mean lower low water [MLLW]) to the slope of the navigation channel (~ -9 ft MLLW) and is bordered by South Park Marina to the North and Boeing to the South. The extent of the boundaries will be determined by this investigation.

2.1.2 T-117 adjacent upland property

The adjacent upland portion of the west shore of the T-117 EAA includes the Port of Seattle's T-117 property. This property, the former Malarkey Asphalt Company site, is located at 8700 Dallas Avenue South in Seattle, Washington. The upland T-117 property covers approximately 5.5 ac including a 50 to 60-ft (15 to 18-m)-wide section of land adjacent to the shoreline owned by the Port of Seattle as successor in interest to the Duwamish Commercial Waterway District No. 1 (DCWD1). In 1999, the Port of Seattle acquired the additional inland parcels that made up the former Malarkey property between the shoreline DCWD1 parcel and Dallas Avenue South. These properties were consolidated to form the present-day T-117.

2.1.3 T-117 adjacent areas

Adjacent properties include the Basin Oil Company on the west side of Dallas Avenue, the Boeing Company to the south, and the South Park Marina to the north/northwest.

2.1.4 **Lower Duwamish Waterway**

The Duwamish River originates at the confluence of the Green and Black Rivers near Tukwila, WA, then flows northwest for approximately 13 mi (21 km), bifurcating at the southern end of Harbor Island to form the East and West Waterways prior to discharging into Elliott Bay. The LDW consists of the downstream portion of the Duwamish River that is maintained by the US Army Corps of Engineers (USACE) as a federal navigation channel (i.e., the reach downstream from and including Turning Basin 3), excluding the East and West Waterways around Harbor Island (Weston 1999).

The shorelines along most of the LDW have been developed for industrial and commercial operations; the waterway serves as a major shipping route for containerized and bulk cargo. In addition, the LDW is a receiving water body for industrial and municipal stormwater and wastewater. Some of these waste streams have been rerouted or discontinued, but there are still numerous storm drains and combined sewer overflows that currently discharge to the LDW. There are no CSOs discharging in the T-117 vicinity.

Current shoreline features within the LDW include constructed bulkheads, piers, wharves, buildings extending over the water, and steeply sloped banks armored with riprap or other fill materials (Weston 1999). Intertidal habitats are dispersed in relatively small patches (i.e., generally less than one ac in size), with the exception of Kellogg Island, the largest contiguous area of intertidal habitat remaining in the LDW (Windward 2003a). The shoreline features of the T-117 EAA include a riprapped bank and bulkhead (see Section 3.2.1 for more detail on T-117 habitat).

Over 50% of the upland areas adjacent to the LDW are industrialized and have been for many decades. Historical and current commercial and industrial operations include cargo handling and storage, marine constriction, boat manufacturing, marina operations, concrete manufacturing, paper and metals fabrication, food processing, and airplane parts manufacturing. Thirty-nine percent of land in the Duwamish estuary is zoned for residential use. Two residential areas, the Georgetown and South Park neighborhoods, are in close proximity to the Lower Duwamish. The South Park neighborhood is located downstream of T-117 EAA between RM 3.0 and 3.4. Portions of South Park are also located on land to the west of T-117 EAA.

2.2 SITE HISTORY

Prior to the 20th century, the Duwamish River meandered widely through a valley consisting of floodplains, freshwater wetland, and tidal marshes before emptying into Elliott Bay (Blomberg et al. 1988; Figure 2-1). Flooding was a common natural occurrence in the river valley. The Duwamish River was fed by the Green, Black, and White rivers, with a combined drainage area of approximately 1,640 mi² (4,250 km²) (Blomberg et al. 1988).

Beginning in 1895 with the dredging of the East Waterway, the Duwamish River's meandering channel was progressively dredged, filled, and straightened (see Figure 2-2) to eventually create the LDW as it exists today. Prior to dredging and filling, the T-117 EAA consisted of seasonal wetland floodplain containing shrub and forest vegetation generally at least 2–3 ft (0.6–1 m) above mean higher high water (MHHW) (Blomberg et al. 1988; Figure 2-1). The river channel in the vicinity of the T117 was dredged in 1918 (Sweet Edwards 1985) and surrounding floodplains were filled to create upland areas. An old oxbow of the river present near the T-117 vicinity (Figure 2-2) was also filled. Based on Figure 2-2 and information presented in Blomberg et al. (1988), it is possible that some of the forested areas near the site were not filled due to the existing elevation above MHHW. The present-day waterway delineation in relation to the historical river channel is shown on Figure 2-3. The filled oxbow feature appears to intersect the present-day waterway near the north-central portion of the project area. Additional details on dredging and filling history of the T-117 area are presented in Section 5.2.1. Details on historical commercial and industrial activities in the vicinity of the T-117 EAA are presented in Section 5.2.2.

Land in the vicinity of T-117 EAA has been used for a variety of industrial activities since the period immediately following river channelization in the early 1900s. The current T-117 upland property adjacent to T-117 EAA consisted of the former Malarkey Asphalt plant parcels located between Dallas Avenue and the strip of upland land owned by the Port of Seattle as successor to the DCWD1. Prior to Port purchase of the former Malarkey property and the subsequent Superfund Removal Action cleanup and paving of T-117 (Figure 2-4), the land was never developed, but was used as a "roadway" for truck traffic through the asphalt plant area. The roadway had a depression that collected runoff and occasionally overflowed to the Duwamish. This area was also used by the asphalt plant as a drain field for a partially buried railcar tank apparently used as a crude oil-water separator. The drain field and surrounding soil were eventually removed during the EPA Superfund emergency PCB soil removal action in 1999, at which time the Port acquired the Malarkey parcels and consolidated the upland holdings to form T-117. From the early 1990s to the late 1990s, Evergreen Lumber used portions of the terminal for untreated lumber storage and loading.

Historical uses have also occurred on the properties located north (down-river) and west of T-117. The down-river half of the land currently comprising the South Park Marina was a mobile home park. Boat transport and engineering operations have also been located in the boat yard. A-B Barrel, a barrel refurbishing and cleaning operation was located at the site in the 1950s. The triangular parcel to the west presently occupied by Basin Oil Company was also the former site of operations for affiliated companies including Frontwater Service and Vintage Oil Inc., handlers of used oil or antifreeze products. Allied Bolt Company and Fasteners, Inc were located on the parcel presently occupied by Seattle Chocolate Company. The specific timeframes and locations of these historical operations are presented in detail in Section 5.

2.3 SITE LAND USE

No commercial, industrial, residential of recreational activities occur at the T-117 EAA, but they do however occur at the T-117 upland property and nearby areas.

2.3.1 LDW and T-117 vicinity

2.3.1.1 Commercial, industrial and residential activities

Upland land uses in the vicinity of the T-117 EAA include residential, commercial, and industrial activities in close proximity to one another (Figure 2-5). Properties located between Dallas Avenue South and the LDW (northeast and east of the city limits) are located in unincorporated King County and include (from north to south) the South Park Marina (residential/commercial activity), T-117 upland property (manufacturing/industrial activity) and Boeing South Park (manufacturing/industrial activities). The South Park Marina is primarily used for boat storage with the exception of 18 live-aboard vessels The area located within the City of Seattle limits extends from the west up to Dallas Avenue South and includes the present-day location of the Basin Oil plant and the commercial and residential parcels to the west (i.e. located along 16th and 17th Avenues South). A chocolate confectionary manufacturing company is located in the large building on the north side of Donovan Street, between 16th and 17th Avenues at 8620 16th Avenue South (Figure 2-6). Basin Oil uses the property north of the chocolate company at 8617 17th Avenue South for excess drum storage, and several residences are located further north at 8609 and 8601 17th Avenue South. Basin Oil also uses a portion of the interior of the south building on T-117 property for storage and oil filter processing. The parcels located at the southwest corner of the intersection of 16th Avenue South and Dallas Avenue South are used by South Park Marina for additional boat storage. Seattle's Department of Design, Construction and Land Use (DCLU) has categorized the Basin Oil parcels and those Boeing parcels within the city limits as manufacturing/industrial. The parcels between 16th and 17th Avenues South are categorized as industrial buffer. Parcels west of 16th Avenue and north of Donovan Street are zoned residential/commercial.

2.3.1.2 Recreational activities

The LDW is not a major area for recreational use compared to other water bodies in and around Seattle (King County 1999a). However, there are several public access points where people may enter the LDW for recreational purposes. Recreational boating in the LDW occurs on a limited basis. The South Park Marina, adjacent to the T-117 EAA, and a public boat launch in the South Park neighbor hood are the closest recreation boating access points to the T-117 EAA. Few data have been located quantifying the frequency with which people use the river for recreational purposes. King County (1999a) discussed the human site use of both the Duwamish River and Elliott Bay, but presented quantitative data only for fishing. They suggested that few, if any, people engage in water activities such as swimming, SCUBA diving, and windsurfing within the LDW.

The recreational population most likely to be directly or indirectly exposed to contaminated sediments is human anglers. These individuals consume seafood from the LDW that may have been in direct contact with LDW sediments. King County (1999a) conducted a survey of fishing and seafood consumption practices and identified sites where recreational fishing occurred in the LDW, none of which were in the vicinity of T-117.

3.0 Physical and Ecological Characteristics

The T-117 EAA is located along a narrow shallow reach of the LDW at a bend in the waterway located from approximately RM 3.5 to 3.7. This portion of the waterway contains a dredged navigational channel and is influenced by salt wedge dynamics as a result of freshwater outflow at the surface and saltwater inflow at depth. The T-117 EAA is characterized by gently sloping intertidal habitat and steep vegetated rip-rap bank. Details of the physical and ecological characteristics of the T-117 EAA and the LDW are presented in this section.

3.1 Physical Characteristics

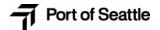
This section discusses physical characteristics of the river (hydrology, salt-wedge dynamics, and shoreline features) and the uplands (geology and hydrogeology).

3.1.1 LDW river and estuarine hydrology

The Green River is the main source of water for the Duwamish River. Historically, the White River and the Black River also entered the Duwamish River but were diverted over the past century, reducing the watershed area and river flow by about 70% (King County 2000). In 1962 the Howard Hanson Dam was installed in the upper part of the Green River primarily for flood control and low-flow augmentation to preserve fish life when river flows were naturally low. The dam effectively decreased peak flows, which now do not exceed 340 m³/s (12,000 cfs), but increased moderate flows from 85 to 140 m³/s (3,920 to 6,460 cfs) as a result of the metered release of floodwaters stored behind the dam (King County 2000).

Recent average annual discharge in the LDW was 51-59 m³/s, measured at the USGS Tukwila gaging station in 1996 and 1997 (USGS 2003). Flow rates measured at the USGS Auburn gaging station from 1962 to 1994 varied from 4.3 to 329 m³/s (NOAA 1998). Flow rates are greatest in the winter due to seasonal precipitation and lowest throughout the late summer dry season. Streamflow can be increased by surface water sources such as storm drains, combined sewer overflows (CSOs), industrial effluents, and nonpoint inputs, although these sources of flow are expected to be less than 1% of total discharge.¹ Streamflow to the LDW is also influenced by water diversions,

 $^{^1}$ Stormdrain discharges to the LDW were estimated at 1,868 million gal/year (0.2 m 3 /s) by Tetra Tech (1988), and CSO discharges are estimated at 20-25 million gal/year (0.002-0.003 m 3 /s) (Windward 2003a).



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particularly by the City of Tacoma's Headworks Dam, which diverts at least 3.2 m³/s daily for municipal use.

Water velocity in the LDW was measured over a one year period during 1996-1997 at a station just offshore of T-117 EAA at RM 3.5 (King County 1999b). Mean velocities ranged from about 3 cm /s at the bottom portion of the water column to about 30 cm/s at the surface (Figure 3-1). The negative flow rate at the bottom represents a net upstream flow in the lower saline layer of the water column due to tidal inflow. The salt wedge dynamics in the LDW are discussed in the following section.

The LDW is a salt wedge estuary, with salinities ranging from 2 to 28 parts per thousand (ppt), depending on water velocity, depth, and tidal condition (Santos and Stoner 1972). Typical of salt-wedge estuaries, the LDW has a sharp interface between the freshwater outflow at the surface and saltwater inflow at depth. The 25-ppt layer of salt water near the river mouth occupies most of the water depth, but tapers towards the upriver portion of the estuary. The location where the saltwater intrusion tapers to zero is called the toe of the salt wedge. Tidal effects and volume of river flow control movement of the salt wedge. In the LDW, the toe of the salt wedge is generally located between Slip 4 and Turning Basin 3 (Santos and Stoner 1972). During summer low-flow conditions, when salt wedge incursion and tidal stage variation are greatest, the salt wedge can extend up to 16 mi from the mouth of the LDW, to near Tukwila (Warner and Fritz 1995). Salinity measurements by Santos and Stoner (1972) at RM 3.2, just downstream from T-117, showed that the estuary at this location had freshwater at all points in the vertical profile only with the combination of a very low tide and high rates of inflow. Dye studies indicate that downward vertical mixing over the length of the salt-wedge is almost nonexistent (Schock et al. 1998). Freshwater inflow and the occurrence of either ebb or flood tides within Elliott Bay heavily influence currents. Tides influence the entire length of the LDW. Average tidal range is -0.91 to 12.81 ft MLLW.2

3.1.2 Shoreline and river channel

The shoreline of the T-117 EAA consists almost entirely of armored structures (riprap) from the top of the bank ($\sim +10$ ft MLLW) to approximately +5 ft MLLW. The shoreline then transitions to a flat sandy silt beach with debris and remnant asphalt wastes from the upland asphalt plant (Figure 3-2). The depth of the navigation channel adjacent to T-117 EAA is at an authorized depth of -15 ft MLLW. This portion of the waterway is dredged occasionally to maintain a navigational depth; the most recent dredging event occurred in 1999. Additional dredging in the vicinity of T-117 EAA was conducted at the South Park Marina in 1992. During this event, 6,900 cubic yards (cy) of sediment from the offshore area in the northern half of the marina was removed and disposed of at the unconfined open-water disposal site in Elliott Bay.

² Information based on NOAA CO-OPS National Tidal Datum from 1993 to 2003.



3.1.3 Geology

The shallow soil in the general South Park vicinity near T-117 reportedly consists of fill material ranging 3–8 ft (1–2.4 m) in thickness. This fill consists of sand with varying amounts of silt mixed with anthropogenic materials (e.g. bricks, rubble, and wood). The alluvium underlying the fill extends to a depth of 95 ft (29 m) below ground surface (bgs), and consists of discontinuous silt units with interbedded sands, silty sands, and some gravel. Thin peat deposits have also been encountered. A finegrained lower unit containing shell fragments has been observed in borings beneath the lower silt, and dense sand and gravel are reportedly observed at depths below 95 ft (29 m) bgs (Wilbur 2002).

According to the results of previous site characterization activities in the T-117 area (SECOR 1997) and other investigations, subsurface soil at T-117 consists of fine to medium sand, sand/silt mixtures, and silt. Previous work indicated that the silt layer was encountered between 5 and 15 ft (1.5–5 m) bgs and sand and gravel were encountered below 15 ft (4.6 m) bgs (Parametrix 1991). Fill reportedly was encountered from ground surface to approximately 3 ft (1 m) bgs (Parametrix 1991); however, other observations indicate the recent fill material may be as thick as 4–5 ft (1.2–1.5 m) or greater in the nearshore upland area (just inland of the shoreline berm). The area subject to PCB soil removal in the former Malarkey area of T-117 (Onsite 2000b) was backfilled to depths ranging from approximately 2 to 6 ft (0.6–2 m) with quarry spalls, consisting of large angular rocks. This backfill was overlain with an asphalt pavement system (gravel sub-grade and bituminous pavement) approximately 1 ft (0.3 m) thick. A general cross section of T-117 is shown in Figure 3-3.

3.1.4 Hydrogeology

The unconfined aquifer in the Duwamish River Valley is generally located within the alluvium unit. At the site, shallow groundwater extends into the overlying sand and silt fill soil, and water table deviations are influenced by tidal fluctuations in the LDW. Groundwater is recharged from the upland areas to the west (Wilbur 2002).

Groundwater level data collected by previous investigators (SECOR 1997; Hart Crowser 1992) indicate that groundwater near T-117 EAA occurs between about 5 and 12 ft (1.5–3.6 m) bgs. The groundwater beneath the site is hydraulically connected to the LDW and is tidally influenced. Tidal influence has been observed in all four monitoring wells located in the vicinity of the upland T-117 area and were documented by piezometric measurements conducted in 1998 (SECOR 1998). The exact limit of this influence is not known, but likely extends throughout most of the upland portion of the study area. The area affected by tide-related flow direction reversals is generally within 100-150 m of the waterway (Booth and Herman 1998). Groundwater discharges have been observed at the base of the shoreline riprap (at the mudline) near the central portion of T-117 EAA and south of the South Park Marina boat ramp during low tides. Locations of the two seeps appear to be relatively permanent, as demonstrated by channels cut into the tideflats between the seep

locations and the main river channel. Two or three minor seeps have also been observed along the T-117 EAA shoreline, but the flow is intermittent and not as pronounced. The inferred direction of groundwater flow is generally toward the east during low tide and to the northeast during high tide. Net groundwater flow is toward the LDW (Figure 3-4).

3.2 ECOLOGICAL CHARACTERISTICS

This section provides an overview of existing data regarding habitat near T-117 and site usage by benthic invertebrates, fish, and wildlife.

3.2.1 Habitat

Estuarine intertidal and nearshore subtidal ecosystems in the LDW provide important habitat for juvenile salmonid growth, physiological transition, and predator avoidance during their outmigration to ocean rearing grounds. The estuarine environment also provides refuge for various marine fish larval stages, and supports an array of preferred prey for all salmonid life stages.

The intertidal zone of the T-117 EAA extends approximately 15 to 65 ft (4.6 to 20 m) from the immediate shoreline, around +4 ft MLLW, to a depth of approximately -3 ft MLLW (Figure 3-5). The T-117 intertidal zone includes more than 43,000 ft² (4,000 m²) of gently sloping, fine-grained sediment. This area is potential habitat for benthic primary and secondary production for the juvenile salmonid food web (Figure 3-2). The surface sediment habitat within the T-117 EAA is predominantly fines, sand, and gravel. Recent data indicate the mean percent fines of the nearshore environment north, south and adjacent to the T-117 EAA is 87%, 54%, and 64%, respectively (see Table 4-4). Intertidal slopes within the T-117 EAA are predominantly gradual, increasing in steepness near the NW site boundary (Figure 3-5).

3.2.2 Site usage

3.2.2.1 Aquatic plants

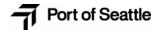
No historic aquatic plant surveys have been conducted near T-117. Recent site visits by Windward staff observed no aquatic plants or macro algae in the intertidal area. The river channel is periodically dredged making aquatic plant and algae beds unlikely.

3.2.2.2 Benthic invertebrates

Clams have been observed in the intertidal zone of T-117 EAA as part of LDW RI surveys. No other benthic invertebrate surveys, both epibenthic and infaunal, have been conducted at T-117 EAA.

Most benthic macrofauna³ data are from surveys conducted in the vicinity of Kellogg Island (approximately 2.7 mi downstream of T-117) (Leon 1980; King County 1999c; Cordell et al. 1996, 1997, 1999, 2001). Both intertidal and subtidal macrofauna were

³ Invertebrates retained on a 0.5-mm sieve.

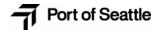


collected in these studies in substrate ranging from sand to mud. Studies by Cordell et al. (1996, 1997, 1999, 2001) included a site closer to T-117 in Turning Basin 3 (approximately 1.5 mi upstream of T-117). In this study macrofauna was collected on intertidal mudflats at 0.0-m elevation. Factors influencing the diversity and abundance of benthic species are salinity, water depth, percent fine-grained sediment, and organic carbon content.

Similar numbers of taxa, ranging between 14 and 21 per site were found at Kellogg Island and Turning Basin 3 in 1997 (Cordell et al. 1996, 1997, 1999, 2001). In 1995, relatively more taxa (27) were found at Kellogg Island than in Turning Basin 3 (16). In the years studied the total density of organisms was generally higher at Kellogg Island than in Turning Basin 3. Other benthic invertebrate surveys have found the number of taxa at Kellogg Island to range from 27 to 68 per site (King County 1999c; Leon 1980). Cordell et al. (1996, 1997, 1999, 2001) found the benthic invertebrate macrofauna community at Turning Basin 3 dominated by nematodes, oligochaetes, and Corophium spp. (amphipods) reflective of lower salinity, and the Kellogg Island community dominated by nematodes, oligochaetes, polychaetes, and crustaceans, reflective of higher salinity. The other surveys at Kellogg Island found the community dominated by polychaetes, mollusks, and arthropods (King County 1999c; Leon 1980). The study by Cordell et al. (1996, 1997, 1999, 2001) also surveyed the benthic meiofauna⁴ community at Kellogg Island and Turning Basin 3. Slightly more numerous taxa (16-23) were found at the Kellogg Island area compared to the Turning Basin 3 site (13-17) in 1997, whereas in 1995 more taxa (32) were found at Kellogg Island compared to Turning Basin 3 (19). Both communities were dominated by nematodes and harpacticoid copepods. T-117 EAA benthic community structure is likely to be similar to that of Turning Basin 3 based on the lower salinity. A study by King County (1999b) evaluated the salinity within the LDW to determine the percentage of time that salinity fell below 5 ppt at a given location. Five ppt is a threshold level for most marine invertebrates below which stress and eventually mortality will occur depending of exposure duration. At Brandon RM 1.1 the salinity at the bottom never fell below 5 ppt, at the 8th Ave RM 2.8 the salinity fell below 5 ppt 0.19% of the time and at Norfolk RM 4.9 the salinity was below 5 ppt 41.19% of the time. The other benthic surveys had no information on salinity. Part of the intertidal mudflats near T-117 is similar to the mudflats at the Turning Basin 3 and Kellogg Island with fines >40% (Cordell et al 1996, 1997, 1999, 2001).

No epibenthic community survey has been conducted near T-117. The epibenthic community around Kellogg Island was surveyed in 1989 using a plankton pump, a standard epibenthic sampling device (Williams 1990). The survey examined seven transects and identified a total of 80 taxa. The community was dominated by small harpacticoid copepods, cumaceans, small annelids, and nematodes.

⁴ invertebrates less than 0.5 mm and in this study retained on a 0.153 mm sieve



A bivalve reconnaissance survey was conducted by Windward (2000) at five sites in four reaches of the river. The sites closest to T-117 were RM 2.8 (Slip 4) and RM 4.1 (the Duwamish Yacht Club). Abundance of bivalves was highest at Kellogg Island and lowest in Slip 4 and the Duwamish Yacht Club area. Five different species were identified at Kellogg Island (Eastern soft-shell clam, butter clam, sand clam, bentnose clam, and inconspicuous macoma) whereas only the Eastern soft-shell clam was found at RM 2.8 and 4.1.

Common larger epibenthic organisms in the LDW include crustaceans and mussels. Adult Dungeness and red rock crabs were collected at multiple locations near Kellogg Island (ESG 1999), but were not collected upstream of this area. Juvenile Dungeness crabs were found up to the 1st Avenue South Bridge (RM 3.4). Mussels were observed in large numbers on pilings and other structures in the lower, more saline end of the LWD and have been reported to occur to and slightly upstream from Turning Basin 3.

3.2.2.3 Fish

Most of the LDW fish community surveys have been conducted in the vicinity of Harbor Island or Kellogg Island (Weitkamp and Campbell 1980; Meyer et al. 1981; Taylor et al. 1999; West et al. 2001). Sampling gear used to capture the fishes included beach seine, otter trawl, purse seine, and gill nets. The number of reported species from the Kellogg Island area ranged from 18 to 26 (Matsuda et al. 1968; Miller et al. 1975; Weitkamp and Campbell 1980). The dominant species were chinook, coho, and chum salmon, English sole, snake prickleback, sculpin spp., shiner perch, starry flounder, and three spine stickleback. Other reported species from the area included Pacific herring, longfin smelt, Pacific cod and tomcod, sole spp., and perch spp. Three surveys sampled fishes near the T-117 area (Warner and Fritz 1995; Miller et al. 1975, 1977). However, only one of the reports (Miller et al. 1975) listed the species caught near T-117. A total of 19 fish species were caught, including longfin smelt, starry flounder, soles, sculpin spp., snake prickleback, Pacific tomcod, Pacific herring, perch spp., and chinook and coho salmon.

3.2.2.4 Wildlife

Formal studies, field observations, and anecdotal reports indicate that up to 87 species of birds and six species of mammals use the LDW at least part of the year to feed, rest, or reproduce (Cordell et al. 2001; Canning et al. 1979; WDFW 1999). Monitoring of birds and mammals has not been conducted in the immediate vicinity of T-117. General use of the LDW by birds and mammals is discussed separately in the following sections.

Birds

Cordell et al. (2001) observed bird species during extensive monitoring of four sites (two at Turning Basin 3, one on Kellogg Island, and one at Terminal 105) in LDW between 1995 and 2001. At these four sites, Cordell et al. (2001) reported 75 species of birds: 32 passerine/upland birds, 7 raptors, 8 shorebirds/waders, 16 waterfowl, and

12 seabirds. Diversity and abundance were highest at the Kellogg Island site, but other areas of the LDW were also consistently used by a wide variety of birds. Birds were most abundant in the spring and least abundant in the summer. A complete list of birds documented to use the LDW is presented in the LDW Phase 1 RI (Windward 2003a).

The presence of a gently sloping intertidal habitat offshore from the site indicates that the T-117 area may be used by shorebirds. In addition, fish and benthic invertebrates present in this area may serve as prey for eagle, osprey, great blue heron, and some waterfowl and seabird species.

The bald eagle is listed under the Endangered Species Act as a threatened species, but is currently under review for delisting. In Washington, it is also listed as a state threatened species (WDFW 2003). There are five bald eagle nests within 8 km (5 mi) of the LDW that were occupied in 1999 (King County 1999d). The closest nest is located in West Seattle within 1.6 km (1 mi) of the T-117. One or two pairs of resident eagles may be found in the LDW vicinity during the summer (King County 1999d). Overwintering migrant eagles are routinely observed in the vicinity of the LDW from the beginning of October through late March.

Common waterfowl and seabirds using the LDW include mallards, gadwalls, canvasbacks, mergansers, cormorants, gulls, and western grebes. Common shorebirds observed in the LDW include great blue heron, sandpipers, and killdeer. The spotted, least, and western sandpipers are reported to use the LDW in substantive numbers. A consistent sizeable population of great blue heron is present in the waterway. Two nesting colonies can be found in the vicinity of the LDW: one is located 6.8 mi (11 km) to the northwest (the Kiwanis Ravine colony), and the other is located 7.5 mi (12 km) to the southeast in Renton (the Black River colony). A colony of up to 37 active nests was located in West Seattle a few hundred meters from Kellogg Island until 1999, but no successful nesting occurred there in 2000 or 2001 (Norman 2002).

Mammals

Three semi-aquatic terrestrial mammals use the LDW (river otter, muskrats, and raccoons) and three marine mammals may occasionally enter the LDW (harbor seal, California sea lion, and harbor porpoise) (Tanner 1991).

Anecdotal information indicates that a river otter family lives year-round on Kellogg Island in the LDW, approximately 3 mi downstream from the T-117 area, although otters have not been observed by Cordell during wildlife surveys (Cordell et al. 2001). River otters are almost exclusively aquatic, and prefer food-rich habitats such as the lower portions of streams and rivers, estuaries, and lakes and tributaries that feed rivers (Tabor and Wight 1977; Mowbray et al. 1979). Muskrat populations are reported to exist at Terminal 107 and at Turning Basin 3 (Canning et al. 1979). Raccoons are reported to be common along the forested ridge slopes to the west of the LDW, and are known to adapt to urban settings such as the T-117 EAA. Raccoons are generally

less dependent on the aquatic environment for food and habitat than river otters and muskrats.

Harbor seals and sea lions are commonly seen in Elliott Bay and have been observed in the LDW as far upstream as T-117. During a survey conducted by WDFW from December 1998 to June 1999, over 307 hours on 52 days, sea lions were observed on 16 occasions and seals on 17 occasions (WDFW 1999), with most observations for both species occurring below the 1st Avenue South Bridge. Harbor seals have been shown to forage over large distances ranging from 5 km (3.1 mi) (Stewart et al. 1989) to 55 km (34.2 mi) (Beach et al. 1985). Recent information on use of the LDW by harbor porpoises was not available, although it has been noted that they occasionally enter the LDW (Dexter et al. 1981).

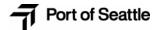
4.0 Previous Environmental Investigations

This section discusses previous investigations conducted in both the aquatic and upland environments in the vicinity of T-117.

4.1 AQUATIC DATA

Previous studies have addressed surface and subsurface sediment chemistry, porewater chemistry, tissue chemistry, benthic communities, bioassay tests, and surface water quality in the LDW since 1990 (Windward 2003a). While these kinds of descriptive data include the area around T-117, almost half of the sediment samples do not represent current conditions because the sediment that was characterized has been dredged. Of the samples considered to be current, there are 27 surface sediment samples (0-15 cm)⁵, 2 subsurface sediment samples (0-2 ft and 2-4 ft), and 2 tissue (English sole) samples within or in the vicinity of the T-117 EAA . Samples from areas subsequently dredged in this area include 13 surface sediment samples, 1 porewater sample, 4 subsurface samples, and 3 types of bioassay tests conducted on 4 subsurface samples. Current surface sediment samples are discussed in Section 4.1.5. These samples, collected with a Van Veen grab sampler, are distributed throughout most of the study site and are discussed in terms of their location within sections of the study area. The two subsurface sediment samples, collected using a sediment core sampler from the T-117 EAA, are discussed in Section 4.1.6. The dredged surface sediment samples, which were collected primarily from the navigation channel, are discussed in Section 4.1.7.1. The porewater sample, also collected from an area that has since been dredged, will be discussed in Section 4.1.7.2. The chemistry results of dredged subsurface samples are discussed in section 4.1.7.3. All bioassay tests were conducted with subsurface sediments collected from areas that have been dredged; the results of these studies are presented in Section 4.1.7.4. The two tissue chemistry samples

⁵ Although surface sediment samples are considered to be samples collected at depths less than 15 cm, all surface sediment samples in the vicinity of T117 were collected from a depth horizon of less than 10 cm.



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(English sole) were collected from the navigation channel adjacent to T-117 EAA, and will be discussed in Section 4.1.8.

Benthic community characterization and water quality data are not available for this area of the LDW.

4.1.1 Historic data collection

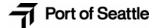
Eight sampling events are characterized in this data summary for the area of interest (Table 4-1, Figure 4-1). Samples were collected during one study in 1991 (Spearman 1991), one study in 1996 (Weston 1998), two studies in 1997 (Exponent 1998; NOAA 1998) three studies in 1998 (Weston 1999; ESG 1999; Striplin 1998), and one study in 2000 (Striplin 2000). With the exception of the Spearman (1991) and Striplin (1998, 2000) events which were conducted to characterize dredge material for disposal suitability determination, the purpose of all studies was to provide a general characterization of sediment quality. All samples were collected within and west of the navigation channel of T-117 EAA.

With the exception of NOAA (1998), sediment samples were all analyzed for metals, semi-volatile organic compounds, organic carbon, and PCBs. The NOAA (1998) event included only analyses of PCBs, polychlorinated terphenyls, organic carbon, and grain size. Only PCBs, TBT, and mercury were analyzed in the tissue samples collected during the WSOU study (ESG 1999).

The sediment surveys summarized in Table 4-1 used similar or identical analytical methods for most analytes, with one notable exception. PCB analyses for NOAA SiteChar were conducted by high performance liquid chromatography and a photodiode array detector (HPLC/PDA) in contrast to PCB analyses for all the other events, which were conducted using EPA's standard method of gas chromatography with an electron capture detector (GC/ECD). NOAA data for total PCBs are based on a nonstandard analytical method and may not be quantitatively comparable to other data generated using standard analytical techniques. The NOAA laboratory data for total PCBs reflect the difference between the results of one analysis for the sum of PCBs and polychlorinated terphenyls (PCTs) and the results of a separate analysis for PCTs alone.

Krahn et al. (1998) reported the results for 30 samples that were analyzed by both HPLC/PDA and GC/ECD methods by two different laboratories. 6 The two laboratories calculated total PCBs for each sample, which were then compared to each other. Total PCB concentrations varied between the two laboratories by as much as a factor of six (Krahn et al. 1998). Regression analyses conducted for the two sets of results indicate that the GC/ECD results were lower than the HPLC/PDA results at high PCB concentrations, and higher than the HPLC/PDA results at low PCB concentrations (Krahn et al. 1998). The regression coefficient (R²) between the two sets

⁶ HPLC/PDA analyses were done by the NMFS laboratory in Seattle; GC/ECD analyses were done by Analytical Resources Inc., Seattle.



of analyses was 0.92. The differences between the total PCB concentrations calculated by the two laboratories are not surprising given the differences between the two methods, including 1) different ranges of linear response for the two detectors, 2) differences in methods for calculating total PCBs, 3) differences in methods of quantifying and/or removing analytical interferences, and 4) differences in detection limits.

Despite the differences between the two analytical methods, data from both methods are used for the purposes of this data summary, although the uncertainty associated with total PCB concentrations may be significant in some areas.

All data discussed in this data summary has been validated, and the QA level is indicated in Table 4-1. The only data that were rejected through the validation process were concentrations of pentachlorophenol assayed in the Duwamish Waterway Phase 1 site characterization (Exponent 1998) due to very low matrix spike recoveries.

Table 4-1. Summary of previous aquatic investigations in the vicinity of T-117 since 1990

				Number o	F SAMPLES a			
SAMPLING EVENT	EVENT CODE	YEAR CONDUCTED	CHEMICAL GROUPS ANALYZED	SURFACE b (<15 CM)	SUBSURFACE ^c (> 15 CM)	REFERENCE	QA LEVEL ⁿ	
EPA Site Inspection: Lower Duwamish River	EPA SI	1998	metals, pesticides, PCB Aroclors & selected congeners, dioxins and furans, TBT, SVOCs, VOCs	14 ^{d, h}	2	Weston (1999)	QA2	
Duwamish Waterway Phase 1 site characterization	Boeing SiteChar	1997	metals, PCB Aroclors, SVOCs	6	0	Exponent (1998)	QA2	
RCRA Facility Investigation Duwamish Waterway sediment investigation, Plant 2- Phase 2B	Plant 2 RFI-2b	1996	metals, PCB Aroclors, SVOCs	7 ^{e, i}	0	Weston (1998)	QA2	
Duwamish Waterway sediment characterization study	NOAA SiteChar	1997	total PCBs, selected PCB congeners, total PCTs	15 ^f	0	NOAA (1997, 1998)	QA2	
South Park Marina sediment sampling and analysis	SPM SA	1991	metals, PCB Aroclors, SVOCs, VOCs, pesticides	2 ^g	0	Spearman (1991)	QA1	
Waterway sediment operable unit, Harbor Island Superfund site	WSOU	1998	PCBs, TBT, and mercury	2 (fish tissue)	0	ESG (1999)	QA2	
PSDDA Chemical characterization of LDW FY99	PSDDA 98	1998	metals, pesticides, PCB Aroclors & selected congeners, dioxins and furans, TBT, SVOCs, VOCs	0	2 ^j	Striplin (1998)	QA1	
PSDDA Chemical characterization of LDW FY2000	PSDDA 2000	2000	metals, pesticides, PCB Aroclors & selected congeners, dioxins and furans, TBT, SVOCs, VOCs	0	1 ^{j, k}	Striplin (2000)	QA1	
Site inspection for the Malarkey Asphalt Company	Malarkey 94	1994	metals, pesticides, PCB Aroclors, SVOCs, VOCs	1	0	URS (1994)	QA1	
USACE Operation and Maintenance	USACE 90/91	1990 and 1991	metals, pesticides, PCB Aroclors & selected congeners, dioxins and furans, TBT, SVOCs, VOCs	7 ^{l,m}	0	USACE 1990, 1991	QA1	

FINAL

^a Sample totals do not include laboratory replicates.

Surface sediment samples were collected from 0-10 cm within the 0-15 cm depth horizon, often referred to as the biologically active zone.

Subsurface sediment samples collected at 0-2 ft and 2-4 ft depth horizons.

Four samples were collected inside the navigation channel dredged by USACE in 1999.

^e One sample was collected inside the navigation channel dredged by USACE in 1999.

- Nine samples were collected inside the navigation channel dredged by USACE in 1999.
- Bioassay tests are associated with these surface samples which were collected from an area (South Park Marina) which has since been dredged.
- One surface sediment sample was analyzed for porewater.
- Includes one field duplicate sample.
- Bioassay tests are associated with these dredged subsurface samples (0–4 ft depth horizon).
- bata from composite dredged subsurface sample (Striplin 2000) will not be discussed because two of the three samples combined for composite were not in the study area.
- All samples were collected from the navigation channel and have been dredged.
- ^m Chemical results from this sampling event are not discussed further, as these sample locations have been dredged twice and do not represent current conditions.
- ⁿ QA1 includes a review of quality control data, such as matrix spike/matrix spike duplicates, laboratory control standards, surrogate standards, and method blanks. QA2 includes all the elements of a QA1 review, plus additional review of calibration, instrument performance, and calculation checks.

PCB – polychlorinated biphenyl

PCT – polychlorinated terphenyl

SVOC – semivolatile organic compound

TBT – tributyltin

VOC - volatile organic compound

Data qualifier codes are available for all data in Appendices A-C. Some sample results were qualified as estimates. Many of the data qualifiers reflect a directional bias (i.e., overestimate or underestimate), although the direction of the bias was not explicitly included in any quantitative analyses. Estimated data were considered usable for the purposes of the data summary.

Many other results were qualified with a "U" flag indicating that the chemical was not detected at the reporting limit specified. Reporting limits were variously defined by the different laboratories responsible for historical data analyses. Chemicals for which detection limits are above screening levels are indicated in Table 4-5 and discussed in associated text.

Older sediment data exist (Windward 2003a), but are not included in this project, because the data quality objectives suggest that these data are not representative of current conditions (Windward 2001). Two sampling events occurred prior to 1990 in the area of interest. A sediment survey in 1985 associated with the Elliot Bay Action Program (Tetra Tech 1998) resulted in one sample location in the study area, and a survey conducted by the EPA in 1982 (U.S. EPA 1982) yielded 2 samples in the study area. Each of these samples was located in regions unaffected by dredge events, but the chemical results are not discussed in this data summary due to the amount of time transpired since the events. Furthermore, the samples collected in these surveys were in areas that are well represented by more recent samples included in this data summary. There were also nine samples collected in 1990 and 1991 as part of the USACE dredge operation and maintenance (USACE 1990, 1991). Although these samples are included in Table 4-1 which describes all sampling events since 1990, they are not discussed because they are not associated with the most recent dredge event in the area.

4.1.2 Regions within the study area

For the purposes of this study, samples will be referred to according to their location within six regions (Table 4-2; Figure 4-2) The regions are: 1) the T-117 EAA; 2) the navigation channel adjacent to T-117; 3) the nearshore zone north of T-117 to RM 3.3; 4) the navigation channel north of T-117 to RM 3.3; 5) the nearshore zone south of T-117 to RM 3.8; and 6) the navigation channel south of T-117 to RM 3.8. Figure 4-2 shows the sample locations within each of these regions. Region designations, approximately based on property lines and river miles, are used only for the purpose of organizing data by general proximity to T-117.

Table 4-2. Sediment chemistry samples grouped by region

		Number	OF SAMPLES ^a	
AREA DESCRIPTION	CHEMICAL GROUPS ANALYZED	Surface ^b (< 15 cm)	Subsurface ^c (> 15 cm)	SAMPLING EVENTS (sampling date)
T-117 EAA	Conventionals and sediment grain size, metals, PCBs, SVOCs, VOCs, total PAHs, pesticides, dioxins and furans	8	2	NOAA SiteChar (1997), EPA SI (1998), Boeing Site Char (1997), Malarkey94 (1994)
Navigation channel adjacent to T-117	Conventionals and sediment grain size, metals, PCBs, SVOCs, VOCs, total PAHs,	8 ^{d,}	1 ^g	NOAA SiteChar (1997), EPA SI (1998), Boeing SiteChar (1997), Plant 2 RFI-2b (1996), USACE 98 (1998)
Nearshore zone north of T-117 to RM 3.3	Conventionals and sediment grain size, metals, PCBs, SVOCs, VOCs, total PAHs	6 ^e	0	NOAA SiteChar (1997), EPA SI (1998), SPM SA (1991)
Navigation channel north of T-117 to RM 3.3	Conventionals and sediment grain size, metals, PCBs, SVOCs, VOCs, total PAHs	8 ^f	0	NOAA SiteChar (1997), EPA SI (1998), Plant 2 RFI-2b (1996)
Nearshore zone south of T-117 to RM 3.8	Conventionals and sediment grain size, metals, PCBs, SVOCs, VOCs, total PAHs	8	0	NOAA SiteChar (1997), EPA SI (1998), Boeing Site Char (1997)
Navigation channel south of T-117 to RM 3.8	Conventionals and sediment grain size, metals, PCBs SVOCs, VOCs, total PAHs	7 ^d	1 ^g	NOAA SiteChar (1997), EPA SI (1998), Boeing Site Char (1997), USACE 98 (1998)

Sample totals do not include laboratory replicates

PAH – polycyclic aromatic hydrocarbon

SVOC - semi-volatile organic compound

VOC - volatile organic compound

Table 4-3, the companion table to the map in Figure 4-2, lists location numbers associated with each sample ID. From this point forward in the document, the location numbers will generally be used when describing sample results rather than sample IDs. For most locations in the T-117 vicinity, there is only one sample ID. Two exceptions exist within this dataset. At location number 496, field duplicate samples were collected. Chemical results for these samples are averaged for the purposes of this data summary. At location number 772, multiple sample IDs indicate samples collected from different depth horizons: one sample was collected from 0-15 cm (surface), and two subsurface samples were collected at different depths (0-2 ft and 2-4 ft). The subsurface sediment samples will be discussed separately.

FINAL

Surface sediment samples were collected from 0-10 cm within the 0-15 cm depth horizon, often referred to as the biologically active zone.

Subsurface sediment samples collected at 0-2 ft and 2-4 ft depth horizons

Six samples were collected inside the navigation channel dredged by USACE in 1999

Two samples were collected within the South Park dredge area

One sample was collected inside the navigation channel dredged by USACE in 1999

Subsurface sample was collected inside the navigation channel dredged by USACE in 1999

Surface and subsurface sediment samples are displayed together in Figures 4-1 and 4-2 and in Tables 4-1 through 4-4, but they will be segregated by depth horizon in all other tables and figures.

Most of the nearshore samples (between the shore and the navigation channel) were collected from T-117 EAA and south of T-117 adjacent to Boeing property. Of these samples, the majority were collected from the intertidal zone (between +5 ft and -3 ft MLLW).

4.1.3 Current and dredged samples

Two dredge events occurred in the vicinity of T-117 during the time period of the sampling events summarized in this report. The navigation channel, maintained by USACE, was last dredged in 1999. Also, part of the nearshore region north of T-117 was dredged in 1991 to accommodate vessels at the South Park Marina. The GIS layers used to determine the spatial extent of the dredge events were acquired from USACE prior to beginning this study, and were recently revised per USACE information obtained by phone. Dredge prisms are represented in Figures 4-1 and 4-2.

Some of the sediment chemistry data collected near T-117 no longer reflect current conditions because of these dredging events. These samples are displayed differently from those locations that are considered current, as indicated by the map legend in Figure 4-1. The data resulting from samples collected prior to a dredge event will be excluded from table calculations. The excluded sample numbers are identified in Table 4-3, and chemistry results are summarized in Section 4.1.7. Three samples within dredge prism boundaries in the area described as the "nearshore zone north of T-117" are considered current (Figures 4-1 and 4-2), as the South Park Marina dredge event occurred several years before sampling. Two subsurface sediment samples exist within this region, collected by Spearman (1991). These samples were collected within an area that has since been dredged, and the chemistry results are discussed in Section 4.1.7.3. Bioassay results associated with these dredged subsurface sediment samples are briefly discussed in Section 4.1.7.4.

Table 4-3. Sample IDs for sediment and porewater samples collected at each location

T-117 EAA		Navigation Channel Adjacent to T-117		NEARSHORE NORTH OF T- 117 TO RM 3.3			TION CHANNEL NORTH		ORE SOUTH OF 7 TO RM 3.8	NAVIGATION CHANNEL SOUTH OF T-117 TO RM 3.8	
Loc#	SAMPLE ID	Loc#	SAMPLE ID	Loc#	SAMPLE ID	Loc#	SAMPLE ID	Loc# SAMPLE ID		Loc#	SAMPLE ID
248	WIT07-01	25	CH03-01	300	WST09-01	32	CH04-04	249	WIT07-02	27	CH03-03
301	WST09-02	26	CH03-02	309	WST10-08	493	SD2B-DUW78-0000	250	WIT07-03	28	CH03-04
772 surface	SD-DR206-0000	296	WST08-01	771	SD-DR204-0000	494	SD2B-DUW79-0000	775	SD-DR209- 0000	298	WST08-03
772 0-2 ft	SD-DR206- 0000A	297	WST08-02	793	SD-DR227-0000	495	SD2B-DUW80-0000	776	SD-DR210- 0000	299	WST08-04
772 2-4 ft	SD-DR206-0020	497	SD2B-DUW82-0000	6627	Comp-1	496	SD2B-DUW81-0000	898	SD0009	796	SD-DR230-0000
773	SD-DR207-0000	498	SD2B-DUW83-0000	6629	Comp-2	496	SD2B-DUW81-1000	897	SD0012	801	SD-DR234-0000
774	SD-DR208-0000	784	SD-DR218-0000			794	SD-DR228-0000	894	SD0018	6643	S2
893	SD0010	795	SD-DR229-0000			800	SD-DR234-0000	895	SD0019		
892	SD0011	6642	S1			794	PW-DR228-0000				
6645	MASS05 ^a										

Bolded table entries indicate samples collected prior to dredge events and are no longer considered current

^a Sample location is identified but results are not discussed due to no TOC value making the results unusable for further interpretation

4.1.4 Physical characteristics

Grain size and the minimum, maximum, and mean total organic carbon (TOC) concentrations for each depth horizon by region are summarized in Table 4-4. Percent fines and TOC values are shown for current surface samples in Figures 4-3 and 4-4. Only data from current samples were used to calculate statistics; no current data were available from the navigation channel south of T-117. Mean percent fines for the other 5 regions ranged from 45.9% (navigation channel north of T-117) to 86.6% (nearshore region north of T-117), and averaged 63.7%. TOC was highest in the navigation channel adjacent to T-117 with a value of 2.56%. Average TOC for the 5 regions containing current surface samples was 1.54%.

Table 4-4. Summary of physical characteristics by region for current surface and subsurface samples

REGION	DEPTH HORIZON	MEAN FINES (%)	Min Fines (%)	Max Fines (%)	MEAN TOC (%)	Min TOC (%)	Max TOC (%)
T-117 EAA	Surface	64.3	28.2	91.8	1.64	0.31	3.17
T-117 EAA	Subsurface	78.0	76.7	79.3	1.62	0.79	2.45
Navigation channel adjacent to T-117	Surface	85.3	81.0	89.5	2.03	1.50	2.56
Nearshore north of T-117 to RM 3.3	Surface	86.6	80.8	95.3	2.00	1.46	2.34
Navigation channel north of T-117 to RM 3.3	Surface	52.1	14.0	77.2	1.80	1.20	2.30
Nearshore south of T-117 to RM 3.8	Surface	54.3	12.9	84.0	0.94	0.05	1.45
Navigation channel south of T-117 to RM 3.8	Surface	no current samples					
Total samples	Surface	63.7	12.9	95.3	1.56	0.05	3.17

4.1.5 Current surface samples

Detection frequencies and SQS and CSL exceedances are given in this section for detected chemicals. SMS standards are promulgated by the state to assess sediment quality; these screening levels are not being identified as cleanup action levels. DMMP guidelines (SL and ML) were used for chemicals for which SMS criteria are not available. WHO TEF values were used to calculate dioxin/furan TEQs.

4.1.5.1 Current surface sample detection frequencies

Surface sample detection frequencies for each detected analyte over the total study area (all regions from RM 3.3–3.8) are presented in Table 4-5. Only current samples were used to calculate detection frequencies for this table. A list of analytes assayed for each sample is available in Appendix A. The column heading, "Regions where chemicals were detected" refers to the region boundaries depicted in Figure 4-2.

Table 4-5. Detection frequencies for all detected analytes in current surface samples

Analyte	NUMBER OF SAMPLES	DETECTION FREQUENCY %	SQS	CSL	% OF SAMPLES WHERE DL EXCEEDS SQS	% OF SAMPLES WHERE DL EXCEEDS CSL	MINIMUM DETECTED VALUE	MAXIMUM DETECTED VALUE	Unit	REGIONS WHERE CHEMICAL WAS DETECTED
Dioxins and furans										
1,2,3,4,6,7,8-HpCDD	1	100	na	na	na	na	59	59	pg/g dw	T-117 EAA
1,2,3,4,6,7,8-HpCDF	1	100	na	na	na	na	9.9	9.9	pg/g dw	T-117 EAA
2,3,7,8-TCDD TEQ ^a	1	100	na	na	na	na	2.6	2.6	ng/kg dw	T-117 EAA
OCDD	1	100	na	na	na	na	680	680	pg/g dw	T-117 EAA
OCDF	1	100	na	na	na	na	26	26	pg/g dw	T-117 EAA
Total HpCDD	1	100	na	na	na	na	140	140	pg/g dw	T-117 EAA
Total HpCDF	1	100	na	na	na	na	31	31	pg/g dw	T-117 EAA
Total HxCDD	1	100	na	na	na	na	7.5	7.5	pg/g dw	T-117 EAA
Total HxCDF	1	100	na	na	na	na	6.2	6.2	pg/g dw	T-117 EAA
Total PeCDF	1	100	na	na	na	na	7.1	7.1	pg/g dw	T-117 EAA
Total TCDF	1	100	na	na	na	na	4.9	4.9	pg/g dw	T-117 EAA
Metals and trace eleme	nts									
Aluminum	10	100	na	na	na	na	15,000	28,000	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Antimony	10	20	150 ^c	200 ^d	0	0	6	10	mg/kg dw	T-117 EAA
Arsenic	17	94	57	93	0	0	7.1	16	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Barium	10	100	na	na	na	na	41	84	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA

Analyte	NUMBER OF SAMPLES	DETECTION FREQUENCY %	sqs	CSL	% OF SAMPLES WHERE DL EXCEEDS SQS	% OF SAMPLES WHERE DL EXCEEDS CSL	MINIMUM DETECTED VALUE	MAXIMUM DETECTED VALUE	Unit	REGIONS WHERE CHEMICAL WAS DETECTED
Beryllium	10	100	na	na	na	na	0.28	0.50	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Cadmium	17	53	5.1	6.7	0	0	0.14	0.40	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Calcium	10	100	na	na	na	na	3,000	7,100	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Chromium	17	100	260	270	0	0	14	34	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Cobalt	10	100	na	na	na	na	6	11	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Copper	17	100	390	390	0	0	26	51	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Dibutyltin as ion	4	25	na	na	na	na	9.0	9.0	μg/kg dw	T-117 EAA
Iron	10	100	na	na	na	na	22,000	32,000	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Lead	17	100	450	530	0	0	13	46	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA

Analyte	Number OF Samples	DETECTION FREQUENCY %	sqs	CSL	% OF SAMPLES WHERE DL EXCEEDS SQS	% OF SAMPLES WHERE DL EXCEEDS CSL	MINIMUM DETECTED VALUE	MAXIMUM DETECTED VALUE	Unit	REGIONS WHERE CHEMICAL WAS DETECTED
Magnesium	10	100	na	na	na	na	5,500	9,400	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Manganese	10	100	na	na	na	na	230	530	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Mercury	17	94	0.41	0.59	0	0	0.04	0.46	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Nickel	17	100	140°	370 ^d	0	0	9.1	26	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Potassium	10	100	na	na	na	na	2,100	11,000	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Selenium	10	90	na	na	na	na	5.0	18	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Silver	17	58	6.1	6.1	0	0	0.13	0.60	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Sodium	10	100	na	na	na	na	8,100	17,000	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA

Analyte	NUMBER OF SAMPLES	DETECTION FREQUENCY %	sqs	CSL	% OF SAMPLES WHERE DL EXCEEDS SQS	% OF SAMPLES WHERE DL EXCEEDS CSL	MINIMUM DETECTED VALUE	MAXIMUM DETECTED VALUE	Unit	REGIONS WHERE CHEMICAL WAS DETECTED
Thallium	10	90	na	na	na	na	0.04	0.10	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Tin	9	33	na	na	na	na	3.0	6.0	mg/kg dw	Navigation T-117, Nearshore south, T-117 EAA
Tributyltin as ion	4	100	na	na	na	na	12	15	μg/kg dw	Nearshore south, T-117 EAA
Vanadium	10	100	na	na	na	na	39	81	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Zinc	17	100	410	960	0	0	66	130	mg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
PAHs										
Benzo(b)fluoranthene	16	100	2,300	4,500	0	0	40	1,700	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Benzo(k)fluoranthene	16	100	2,00	4,500	0	0	50	1,200	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Benzofluoranthenes (total-calc'd)	16	100	230	450	0	0	5.9	91	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Acenaphthene	16	6.0	16	57	0	0	3.8	3.8	mg/kg-OC	T-117 EAA
Anthracene	16	50	220	1,200	0	0	1.1	4.4	mg/kg-OC	Navigation T-117, Nearshore south, T-117 EAA

Analyte	NUMBER OF SAMPLES	DETECTION FREQUENCY %	sqs	CSL	% OF SAMPLES WHERE DL EXCEEDS SQS	% OF SAMPLES WHERE DL EXCEEDS CSL	MINIMUM DETECTED VALUE	MAXIMUM DETECTED VALUE	Unit	REGIONS WHERE CHEMICAL WAS DETECTED
Benzo(a)anthracene	16	100	110	270	0	0	2.3	29	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Benzo(a)pyrene	16	100	99	210	0	0	2.3	32	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Benzo(g,h,i)perylene	16	100	31	78	0	0	1.8	15	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Chrysene	16	100	110	460	0	0	4.0	58	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Dibenzo(a,h)anthracene	16	62	12	33	0	0	0.67	7.0	mg/kg-OC	Navigation T-117, Nearshore south, T-117 EAA
Fluoranthene	16	100	160	1,200	0	0	5.9	140	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Fluorene	16	6.0	23	79	0	0	4.7	4.7	mg/kg-OC	T-117 EAA
Indeno(1,2,3- cd)pyrene	16	100	34	88	0	0	2.3	16	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Phenanthrene	16	100	100	480	0	0	2.5	66	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA

Analyte	NUMBER OF SAMPLES	DETECTION FREQUENCY %	sqs	CSL	% OF SAMPLES WHERE DL EXCEEDS SQS	% OF SAMPLES WHERE DL EXCEEDS CSL	MINIMUM DETECTED VALUE	MAXIMUM DETECTED VALUE	Unit	REGIONS WHERE CHEMICAL WAS DETECTED
Pyrene	16	100	1,000	1,400	0	0	5.0	130	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Total HPAH (calc'd)	16	100	960	5,300	0	0	30	520	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Total LPAH (calc'd)	16	100	370	780	0	0	2.5	79	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Total PAH (calc'd)	13	100	na	na	na	na	42	600	mg/kg-OC	Navigation T-117, Nearshore south, T-117 EAA
PCBs										
Aroclor 1254	21	71	na	na	na	na	29	250	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Aroclor 1260	21	95	na	na	na	na	25	12,000	μg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA, Navigation north
Total PCBs ^b	28	96	12	65	0	0	1.3	840 r	ng/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA, Navigation north
PCB-18	9	11	na	na	na	na	1.0	1.0	μg/kg dw	T-117 EAA
PCB-28	9	22	na	na	na	na	1.0	2.0	μg/kg dw	Navigation T-117, T-117 EAA

Analyte	Number of Samples	DETECTION FREQUENCY %	sqs	CSL	% OF SAMPLES WHERE DL EXCEEDS SQS	% OF SAMPLES WHERE DL EXCEEDS CSL	MINIMUM DETECTED VALUE	MAXIMUM DETECTED VALUE	Unit	REGIONS WHERE CHEMICAL WAS DETECTED
PCB-44	9	44	na	na	na	na	1.0	5.0	μg/kg dw	Navigation T-117, Nearshore south, T-117 EAA
PCB-55	9	55	na	na	na	na	1.0	19	μg/kg dw	Navigation T-117, Nearshore south, T-117 EAA
PCB-66	9	55	na	na	na	na	2.0	11	μg/kg dw	Navigation T-117, Nearshore south, T-117 EAA
PCB-101	16	81	na	na	na	na	1.0	2,000	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
PCB-105	16	50	na	na	na	na	0.38	38	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
PCB-110	7	100	na	na	na	na	0.88	240	μg/kg dw	Navigation north, Nearshore south, T-117 EAA
PCB-118	16	81	na	na	na	na	0.73	45	μg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
PCB-128	16	43	na	na	na	na	1.0	350	μg/kg dw	Navigation T-117, Nearshore south, T-117 EAA
PCB-138	16	96	na	na	na	na	0.86	920	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA

Analyte	NUMBER OF SAMPLES	DETECTION FREQUENCY %	sqs	CSL	% OF SAMPLES WHERE DL EXCEEDS SQS	% OF SAMPLES WHERE DL EXCEEDS CSL	MINIMUM DETECTED VALUE	MAXIMUM DETECTED VALUE	Unit	REGIONS WHERE CHEMICAL WAS DETECTED
PCB-153	16	100	na	na	na	na	1.2	1,600	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
PCB-156	16	50	na	na	na	na	0.72	35	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
PCB-157	16	12	na	na	na	na	3.7	5.05	μg/kg dw	T-117 EAA
PCB-167	9	22	na	na	na	na	2.0	19	μg/kg dw	Nearshore south, T-117 EAA
PCB-170	16	81	na	na	na	na	1.0	560	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
PCB-180	16	93	na	na	na	na	1.9	970	µg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
PCB-187	9	100	na	na	na	na	1.0	360	μg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
PCB-189	16	25	na	na	na	na	0.78	12	μg/kg dw	Nearshore south, T-117 EAA
PCB-195	9	33	na	na	na	na	1.0	49	μg/kg dw	T-117 EAA
PCB-206	9	11	na	na	na	na	21	21	μg/kg dw	T-117 EAA
PCB-209	9	11	na	na	na	na	1.0	1.0	μg/kg dw	T-117 EAA

Analyte	Number OF Samples	DETECTION FREQUENCY %	SQS	CSL	% OF SAMPLES WHERE DL EXCEEDS SQS	% OF SAMPLES WHERE DL EXCEEDS CSL	MINIMUM DETECTED VALUE	MAXIMUM DETECTED VALUE	Unit	REGIONS WHERE CHEMICAL WAS DETECTED
SVOCs										
Bis(2- ethylhexyl)phthalate	17	94	830°	-	0	0	3.8	24	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA, Navigation north
Butyl benzyl phthalate	17	58	97°	-	5.9	0	1.0	3.7	mg/kg-OC	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA
Carbazole	16	43	na	na	na	na	20	70	μg/kg dw	Navigation T-117, Nearshore south, T-117 EAA
Dibenzofuran	16	6.0	15	58	0	0	1.6	1.6	mg/kg-OC	T-117 EAA
Diethyl phthalate	17	5.0	61	110	0	0	1.3	1.3	mg/kg-OC	T-117 EAA
Dimethyl phthalate	17	23	53	53	0	0	0.67	2.1	mg/kg-OC	Nearshore south, T-117 EAA
Hexachlorobenzene	16	25	0.38	2.3	56	0	0.04	0.75	mg/kg-OC	Nearshore south, T-117 EAA
Phenol	16	56	420	1,200	0	0	50	2,100	μg/kg dw	Navigation T-117, Nearshore north, Nearshore south, T-117 EAA

^a WHO TEF values were used to calculate dioxin/ furan TEQs

na – not applicable

HPAH – high-molecular-weight polycyclic aromatic hydrocarbon

LPAH – low-molecular-weight polycyclic aromatic hydrocarbon

SVOC - semivolatile organic compound

PAH – polycyclic aromatic hydrocarbon

PCB – polychlorinated biphenyl

 ${\sf PCT-polychlorinated\ terphenyl}$



Total PCBs calculated using only detected values for 7 Aroclor mixtures (1016, 1221, 1232, 1242, 1248, 1254, and 1260) in accordance with SMS.

^c DMMP guideline, SL= Screening Level

d DMMP guideline, ML = Maximum Level

4.1.5.2 SQS and CSL exceedances for current surface samples

Sediment chemistry results for all current surface samples collected since 1990 (except for USACE [1991, 1992], for reasons noted in Section 4.1.1) were compared to the sediment management standards (SMS) sediment quality standards (SQS) and cleanup screening level (CSL). For those chemicals for which SMS screening levels are not available, DMMP screening levels (SL and ML) were used. Five sediment sampling locations had PCB concentrations in excess of the CSL. Seven other locations, all in the nearshore regions adjacent to T-117 and south of T-117, had PCB concentrations that exceeded the SQS, but not the CSL. Other chemicals groups that exceeded SQS or CSL include metals (mercury) and SVOCs (phenol and hexachlorobenzene). These chemical groups are addressed in the following tables and associated text. Figures 4-5 through 4-8 show the locations of chemicals whose detected values exceeded the SQS or CSL. Figure 4-2, which shows the location number of each sample, can be used to find the sample associated with each chemical exceedance.

SQS Exceedances for Current Surface Samples

Table 4-6 presents SQS exceedances for current surface samples. Four chemicals exceeded SQS, with total PCBs having the highest degree of exceedance. The sample that yielded the highest PCB exceedance was located in the T-117 EAA (location number 248, ratio of concentration to SQS = 70). Figure 4-5 displays the sample locations where PCB concentrations exceeded SQS or CSL. PCB concentrations did not exceed SQS or CSL in current surface samples in the nearshore region north of T-117 or in the navigation channel.

Table 4-6. SQS exceedance ratios for detected chemicals in current surface samples

Region	LOCATION NUMBER	CHEMICAL	DETECTED CONCENTRATION	Unit	Conc:SQS
Metals and trace elements					
Nearshore south of T-117	776	mercury	0.46	mg/kg dw	1.1
PCBs					
T-117 EAA	248	PCBs (total)	840	mg/kg-OC	70
Nearshore south of T-117	249	PCBs (total)	82	mg/kg-OC	6.8
T-117 EAA	301	PCBs (total)	410	mg/kg-OC	34
T-117 EAA	773	PCBs (total)	380	mg/kg-OC	32
T-117 EAA	774	PCBs (total)	30	mg/kg-OC	2.5
Nearshore south of T-117	776	PCBs (total)	26	mg/kg-OC	2.2
T-117 EAA	892	PCBs (total)	210	mg/kg-OC	18
Nearshore adjacent to T- 117	893	PCBs (total)	15	mg/kg-OC	1.2
Nearshore south of T-117	894	PCBs (total)	20	mg/kg-OC	1.7
Nearshore south of T-117	895	PCBs (total)	15	mg/kg-OC	1.2
Nearshore south of T-117	897	PCBs (total)	21	mg/kg-OC	1.7

REGION	LOCATION NUMBER	CHEMICAL	DETECTED CONCENTRATION	Unit	Conc:SQS
Nearshore south of T-117	898	PCBs (total)	16	mg/kg-OC	1.4
SVOCs					
Nearshore south of T-117	895	hexachlorobenzene	0.75	mg/kg-OC	1.9
Nearshore south of T-117	775	phenol	430	μg/kg dw	1.0
T-117 EAA	773	phenol	2,100	μg/kg dw	5.0

Mercury exceeded the SQS only in the nearshore region south of T-117 (Figure 4-6). Phenol exceeded or was equal to SQS in T-117 EAA and the nearshore region south of T-117 (Figure 4-7). One hexachlorobenzene SQS exceedance was observed in the nearshore region south of T-117 (Figure 4-8). Several chemicals exceeded SQS but were less than the detection limit: 1,2-dichlorobenzene, 1,2-dichlorobenzene, 1, 2,4trichlorobenzene, hexachlorobenzene, butyl benzyl phthalate, DDTs (total calculated), and dieldrin. The methods used to determine chemical concentrations had high detection limits, but are generally accepted to be adequate. Of these chemicals, only hexachlorobenzene was measured in one surface sediment sample. See bolded entries in Appendix A for chemicals that exceeded SQS but were below the detection limit.

CSL Exceedances for Current Surface Samples

Only PCBs and phenol exceeded the CSL in the vicinity of T-117 (Table 4-7). All CSL exceedances occurred within the T-117 EAA and south of T-117. Total PCBs showed the greatest degree of exceedance, with a maximum concentration: CSL ratio of 13 (location number 248, Figure 4-5). One phenol concentration exceeded the CSL in the T-117 EAA (Figure 4-7).

Table 4-7. CSL exceedance ratios for detected chemicals in current surface samples

REGION	LOCATION Number	CHEMICAL	DETECTED CONCENTRATION	Unit	Conc:CSL
PCBs					
T-117 EAA	248	PCBs (total)	840	mg/kg-OC	13
Nearshore south of T-117	249	PCBs (total)	82	mg/kg-OC	1.3
T-117 EAA	301	PCBs (total)	410	mg/kg-OC	6.3
T-117 EAA	773	PCBs (total)	380	mg/kg-OC	5.8
T-117 EAA	892	PCBs (total)	210	mg/kg-OC	3.3
SVOCs					
T-117 EAA	773	Phenol	2,100	μg/kg dw	1.8

As illustrated by Figures 4-5 through 4-8, the 117 EAA and south of T-117 are the two regions of the study area that contain the highest chemical concentrations. These two regions also contained most of the surface samples unaffected by subsequent dredge events.

Both 1,2-dichlorobenzene and 1,2,4-trichlorobenzene exceeded CSL within the study area, yet were not above the detection limits (see italicized entries in Appendix A).

4.1.6 Subsurface samples

Two non-dredged subsurface samples (0-2 ft and 2-4 ft) were collected in 1998 as part of the EPA LDW Site Inspection (Weston 1999). Both samples were collected at location 772 (Figure 4-2) in the nearshore region adjacent to T-117. Appendix B lists the concentrations and locations of all detections. Concentrations of detected chemicals in subsurface samples were compared to determine the ratios of concentrations to SQS and CSL. These ratios are presented in Table 4-8.

Table 4-8. SQS and CSL exceedance ratios for detected chemicals in subsurface samples

DEPTH HORIZON (SAMPLE ID)	Analyte	DETECTED CONCENTRATION (µg/kg dw)	Conc:SQS	Conc:CSL
0-2 ft (SD-DR206-0000A)	Bis(2-ethylhexyl)phthalate	520	1.4	_
0-2 ft (SD-DR206-0000A)	Butyl benzyl phthalate	40	1.0	_
0-2 ft (SD-DR206-0000A)	PCBs (total)	1,300	13	2.4
2-4 ft (SD-DR206-0020)	DDTs (total)	10	1.5	_

4.1.7 **Dredged samples**

Samples collected from dredged areas that are no longer considered current due to dredging events include surface samples, subsurface samples and one porewater sample. Bioassay tests are associated with four subsurface sediment samples. Several chemicals exceeded screening levels whose concentrations were below the detection limit. The relatively high number of chemicals for which this phenomenon occurred is likely due to older analysis methods used in determining concentrations for the subsurface samples in the South Park Marina (location numbers 6627 and 6629, Figure 4-2). Bolded entries in Appendices B and C indicate non-detected samples that exceeded screening levels.

4.1.7.1 Dredged surface samples

The concentrations for each chemical tested for all dredged samples are available in Appendix B, excluding samples collected as part of the Elliot Bay Action Program (Tetra Tech 1988) and the 1990-1991 Duwamish River maintenance dredge (USACE 1991) sampling events due to reasons stated in section 4.1.1. Although many chemicals were detected in the dredged samples, phenol and total PCBs were the only detected chemicals to exceed either SQS or CSL (For non-detected chemicals that exceeded SMS criteria, see bolded entries in Appendix B.) Both screening levels for phenol were exceeded at location number 795 (SQS ratio = 3.6; CSL ratio = 1.3), and PCBs exceeded SQS at location number 6629 (SQS ratio = 1.7). Phenol and PCBs were also exceeded in samples taken from non-dredged areas (section 4.1.5.2).

4.1.7.2 Dredged porewater samples

One porewater sample was collected since 1990 at location number 794 in the navigation channel north of T-117 (Figure 4-2) by Weston (1999). The sediment from which the porewater sample was collected has since been dredged. The following chemicals were detected in this sample but did not exceed SQS or CSL: arsenic, barium, calcium, iron, magnesium, manganese, potassium, silver, sodium, vanadium, and zinc. Chemicals assayed but not detected included aluminum, antimony, cadmium, chromium, cobalt, copper, lead, mercury, nickel, tin, tetrabutyltin as ion, tributyltin as ion, and dibutyltin as ion.

4.1.7.3 Dredged subsurface samples

Two subsurface samples (0-4 ft) were collected from within the navigation channel prior to dredging in 1999 (Striplin 1998). One sample (location number 6642) was collected from the navigation channel adjacent to T-117, and the other sample (location number 6643) was collected from the navigation channel south of T-117 (Figure 4-2). Two additional subsurface samples (0-4 ft) (location numbers 6627 and 6629) were collected in 1991 in the South Park Marina before that area was dredged. Each of these samples was composited from two samples. The location of the composited samples was defined as the centroid of the locations of the original samples. All subsurface sediment samples were collected using a sediment core sampler. Chemical results from these samples are available in Appendix C. No detected chemicals exceeded either SQS or CSL for these samples; for non-detected chemicals that exceeded SMS criteria, see bolded entries in Appendix C.

4.1.7.4 Bioassays using sediments collected prior to dredging

Four dredged subsurface sediment samples (Spearman 1991, Striplin 1998), were used for bioassay tests (location numbers 6627, 6629, 6642, 6643, Figure 4-2). Each sediment sample was used to conduct bioassays, which followed PSEP protocols, on three organisms: amphipods, Neanthes, and echinoderms. All bioassays were in compliance with the QA/QC guidelines set by the PSDDA Management Plan, and indicated that the sediment was suitable for unconfined disposal.

4.1.8 **Aquatic tissue**

Two English sole tissue samples were collected via trawl in 1998 from the navigation channel adjacent to T-117 by ESG (1999) and skinless filets were analyzed for chemical concentrations. Chemicals detected for both samples included Aroclors 1016, 1242, 1254, and 1260; mercury; and total PCBs (Table 4-9). Tributyltin and Aroclor 1248 were assayed, but were not detected in either sample.

Table 4-9. Chemicals detected in fish tissue samples

	DETECTED COM		
CHEMICAL	SAMPLE ID: HH-UD-F3	SAMPLE ID: HH-UD-F2	Unit
Mercury	0.06	0.05	mg/kg ww
Aroclor-1016/1242	16	10	μg/kg ww
Aroclor-1254	300	160	μg/kg ww
Aroclor-1260	210	110	μg/kg ww
PCBs (total calc'd)	526	280	μg/kg ww

4.2 UPLAND

Information regarding previous investigations and actions in the upland T-117 vicinity was obtained for three areas: T-117/Malarkey Asphalt Plant, Basin Oil plant, and Boeing South Park. Most of the upland investigations have focused on the T-117/Malarkey area. For the Basin Oil plant, environmental sampling activities have not been reported in the available agency documentation; investigations for this facility consist primarily of site visits and inspections for compliance with state dangerous waste rules. The only information obtained for the Boeing South Park site was found in a Model Toxics Control Act (MTCA) Release Report (Boeing 1998) for a single release of hydraulic oil in 1997.

Records of environmental investigations or cleanup actions were not available for any of the other current upland activities or sites located in the study area (South Park Marina, Seattle Chocolate, International Inspection, and Port Construction Services) or historical facilities (A and B Barrel, Allied Bolt Co., and Fasteners, Inc.). Table 4-10 is a summary of previous investigations and actions described in this section. Figure 4-9 presents soil removal grids, sampling locations and results indicative of PCB concentrations remaining at the site in subsurface soil beneath the asphalt. Appendix E presents the historical environmental data.

The following text describes the available information for previous investigations or actions related to:

- ◆ T-117/Malarkey Plant
- ◆ Basin Oil Plant
- Boeing South Park

Some information regarding earlier studies was obtained from summary descriptions provided by subsequent investigators and are referenced as such.

4.2.1 T-117/Malarkey Asphalt Plant

This section summarizes results from environmental investigations conducted in the vicinity of T-117 and the Malarkey Asphalt Plant. Investigations are discussed in chronological order.

4.2.1.1 1984 Metro inspection

The Municipality of Metropolitan Seattle (Metro) conducted an inspection of the LDW which included portions of the site in 1984 (URS 1994). Metro collected sediment and surface water samples from the waterway upstream and downstream of the site. Sediment and surface water samples were also collected from an "on-site holding pond," from the storm drain outfall, and from observed groundwater seeps discharging into the waterway. PCBs were detected in "sediment and water" (presumably a turbid grab sample) collected from the on-site ponding area at 23 parts per million (ppm). The water sample collected from the storm outfall contained PCBs at 6.8 mg/L. Zinc was detected in on-site surface water up to 206 ppm. Polycyclic aromatic hydrocarbons (PAHs) were detected up to 11.6 ppm in LDW sediment and surface water. It was concluded that the discharges from the site exceeded Washington State water quality standards for PCBs and zinc. Additional investigation was recommended to determine the source of PCBs and zinc at the site. Appendix E summarizes the soil PCB data (EMCON 1996).

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Table 4-10. Summary of previous upland investigations and actions (see Appendix E for pertinent data)

ACTIVITY	DATE	Investigator	Source	SUMMARY
T-117 and Malarkey As	phalt Site			
Groundwater sampling at T-117 wells	May 2003	Onsite Enterprises, Inc.	Onsite (2003)	Groundwater was sampled from three wells in vicinity of T-117. Chemicals of concern were detected only in Monitoring Well 03 and these were limited to diesel-range TPH (0.70 mg/L), lube oil-range TPH (1.4 mg/L) and six PAH compounds at concentrations ranging from 0.013 to 1.6 µg/L. PCB Aroclors, gas-range TPH, and BTEX were not detected in any of the wells.
PCB soil removal and containment – roadway area	October 1999– February 2000	Onsite Enterprises, Inc.	Onsite (2000b)	Actions included removal and treatment of impounded stormwater, excavation and disposal of over 2,000 tons of PCB-contaminated soil ranging up to 500 mg/kg, backfilling, installation of pavement cap, and storm drain improvements. Abandonment of large diameter well and replacement of three monitoring wells. PCB cleanup objective in soil was 25 mg/kg.
Underground diesel storage tank removal	January 2000	Onsite Enterprises, Inc.	Onsite (2000a)	375-gal (1,420-L) non-leaking diesel tank was removed. Two soil samples from excavation indicated elevated TPH diesel levels (462 and 2780 mg/kg). Other sample concentrations were non-detect.
Utility corridor soil sampling	October 1999	Onsite Enterprises, Inc.	Onsite (1999)	Three borehole locations were sampled along a utility alignment extending from the former tank area to the south metal building. PCB concentrations ranged from 0.77 to 15 mg/kg.
Removal actions, Malarkey dismantling	1997-1998	SECOR International Corp.	SECOR (1998a)	Tank and equipment decommissioning, decontamination, and removal. Hot spot removals (soil from ditch areas, utility corridor). Removal of product from large diameter well.
				Soil was sampled for PCBs, PAH, TPH, and metals. Groundwater was sampled for PCBs, TPH, and TSS.
Focused site characterization	July 1997	SECOR International Corp.	SECOR (1997)	Floating product was sampled in August 1996.
Grandotorization		momandi corp.		Exploratory borings were made. Much of the sampled soil was removed during the 1999 removal action (Onsite 2000b).
Asbestos survey	March 1996	Pacific Rim Environmental on behalf of EMCON	EMCON (1996)	Asbestos-containing material survey was conducted. Twelve suspect materials were found to contain detectable amounts of asbestos.
Soil and water sampling	September 1995	Ecology and Environment (E&E) for EPA	EMCON (1996)	Seven surface soil samples were collected from locations near the ponding area, former tank car, and storm drain ditches. One water sample was collected from inside sump. Samples were analyzed for PCBs and PAHs.

ACTIVITY	DATE	INVESTIGATOR	Source	SUMMARY
Asbestos abatement on Tanks 5 and 7	August 1995	Restec Contractors, Inc.	EMCON (1996)	Asbestos abatement work was performed on two tanks.
Asbestos abatement survey	June 1995	David Evans and Associates, Inc.	EMCON (1996)	Tanks requiring abatement work were identified.
Site inspection	1994	URS	EMCON (1996)	On-site and off-site soil, sediment, groundwater, and surface water were sampled. PCBs and PAHs were detected in soil at former pond/waste areas. Three monitoring wells and groundwater seep were also sampled. PCBs were detected in all wells, and PAHs in MW-3. PCBs were not detected in the seep sample.
UST decommissioning and site assessment	1992	Hart Crowser	Hart Crowser (1992)	Four USTs containing diesel and waste oil were decommissioned, including partially buried railroad tank car. Three USTs were closed in place by filling with concrete slurry. The railroad tank car was removed. Soil samples were taken from the tanks and tested for TPH.
Ecology site hazard assessment	May 1991	Parametrix, Inc. and SAIC	Hart Crowser (1992); URS (1994)	Work included review of Ecology's and Malarkey Asphalt's files, installation of three monitoring wells (MW-1, MW-2 and MW-3), soil sampling and analysis of borehole samples, groundwater sampling, sampling of product in USTs and ASTs. Metals, PCBs, pesticides and volatile organic compounds were found in soil. Results of TCLP analyses on soil were below dangerous waste criteria. Metals, PCBs, pesticides and SVOCs were detected in groundwater. 1/8 in. (0.3 cm) of floating product reported in MW-3.
EPA preliminary assessment	1990	E&E for EPA	Hart Crowser (1992); URS (1994)	In 1990, EPA conducted a Preliminary Assessment (PA) of the site. The PA recommended additional investigation and the possible need to remove the partially-buried railroad tank car. Three USTs were identified. No samples were collected (site visit, history).
EPA TAT SPCC inspection	October 1989	EPA Region 10 Technical Assistance Team (TAT)	URS (1994); EMCON (1996)	A spill prevention, control, and countermeasure (SPCC) inspection was conducted. EPA noted that the on-site tanks did not have secondary containment. No samples were taken.
EPA TSCA (Toxic Substances Control Act) inspection	1989	EPA	Hart Crowser (1992); URS (1994); EMCON (1996)	Samples were collected from a waste oil tank and another tank containing useable light oils. No PCBs were detected. However, total halogenated hydrocarbons (as total chlorine) were reportedly detected at levels up to 1,160 ppm in the sampled product. No materials were noted at this facility to qualify for PCB regulation (URS 1994).
Ecology Sediment Sampling and Inspections	1985 and 1986	Ecology	Hart Crowser (1992); URS (1994)	Sediment samples were collected from an on-site drainage ditch. Results showed elevated lead (1,666 ppm), arsenic (2,027 ppm) and zinc (5,416 ppm).
Ecology Inspection	1985	Ecology	EMCON (1996)	_
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ACTIVITY	DATE	INVESTIGATOR	Source	SUMMARY
Metro Inspection - Metro Sampling of roadway pond and shoreline seep	1984	Municipality of Metropolitan Seattle (Metro)	Hart Crowser 1992; URS 1994; EMCON 1996	Water and sediment samples were collected from the LDW, roadway pond, pond outfall and an apparent groundwater seep at the shoreline. PCBs, PAH and metals were detected in one or more of the water and sediment samples. No PCBs in seep. Claims pond was used for noncontact cooling water although this was later discounted by subsequent investigators.
Basin Oil Plant				
Dangerous Waste Compliance Inspection	2002	Ecology	Ecology 2003	Ecology noted several areas of noncompliance. Issues included addressing the integrity of used oil tanks, condition of secondary containment, and designation of a solid waste prior to disposal. No samples were taken.
Dangerous Waste Compliance Inspection	2000	Ecology	EMR 2000	Ecology noted several areas of noncompliance, including issues with labeling and marking, compatible/closed containers and secondary containment. No samples were taken during the inspection.
Complaint Alleging Violation of Clean Water Act	1995	EPA	EPA 1995	EPA issued a formal complaint against Basin Oil Company alleging violation of the Clean Water Act. Specifically, EPA noted that the company was leasing a 10,000-gal (38,000-L) tank ("Tank M") located in the Malarkey Plant area for storing used oil and did not disclose this activity in the facility SPCC Plan.
Dangerous Waste Compliance Inspection	1995	Ecology	Ecology 1996	No violations of the dangerous waste regulations were noted by Ecology.
Dangerous Waste Site Visit	1994	Ecology	Ecology 1996	Ecology indicated concerns regarding use of the 10,000 gal (38,000-L) storage tank at the Malarkey site and lack of notification regarding Basin's use of the Malarkey site for processing used oil. Concern regarding the integrity of the tank and the fact that the tank has no secondary containment. Also noted that a spill of 500–600 gal (1,900–2,300-L) of used fuel oil associated with Basin Oil activities had occurred on the Malarkey Asphalt site in October 1993
Dangerous Waste Compliance Inspection	1992	Ecology	Ecology 1993	Ecology noted record keeping and manifesting issues.

AST – above-ground storage tank

BTEX – benzene, toluene, ethylbenzene, and total

xylenes

PCB – polychlorinated aromatic hydrocarbon

PAH – polycyclic aromatic hydrocarbon

SPCC - spill prevention, control, and

countermeasure

TCLP - toxicity characteristic leaching procedure

TPH – total petroleum hydrocarbons

TSS - total suspended solids

UST – underground storage tank



The on-site ponding area was reportedly used to hold non-contact cooling water from the facility's stills (Hart Crowser 1992). Metro and Malarkey Asphalt Company negotiated to arrange for the disposal of this wastewater to the sanitary sewer system. Malarkey opted to recycle the water instead, and the area reportedly was filled with soil (EMCON 1996). One investigator mentioned that sludge in the bottom of the pond was not removed prior to filling (Parametrix 1991). No process sludges were observed in the pond area when it was excavated (Onsite 2000b).

4.2.1.2 1985 and 1986 Ecology inspections

Ecology conducted inspections at the site in 1985 and 1986 (URS 1994). During the inspections, Ecology identified "partially buried" underground storage tanks (USTs) and aboveground storage tanks (ASTs) and associated piping at the site. Areas of visibly stained surface soil were also noted. Ecology collected sediment samples from an on-site drainage ditch. The laboratory results of the sediment samples indicated that metals including lead (1,666 mg/kg), arsenic (2,027 mg/kg), zinc (5,416 mg/kg), and cadmium (11 mg/kg) were detected. The results of the investigation prompted Ecology to mandate additional investigation at the site through an enforcement action; however, Malarkey Asphalt Company appealed based on economic hardship, and the investigation was not conducted (EMCON 1996; Parametrix 1991).

4.2.1.3 1989 EPA TSCA inspection

EPA conducted a Toxic Substances Control Act (TSCA) inspection in 1989. Samples were collected from a waste oil tank and another tank containing usable light oils. No PCBs were detected, although total halogens were detected in samples at levels up to 1,160 ppm total chlorine in one tank (Hart Crowser 1992). The contents of the partially buried railroad tank car were not sampled during the TSCA inspection. No PCB-related activities were identified in the TSCA report (EMCON 1996; URS 1994).

4.2.1.4 1989 EPA SPCC inspection

On October 27, 1989, a spill prevention, containment, and countermeasure (SPCC) inspection was performed by the EPA Region 10 Technical Assistance Team (E&E 1990). It was observed that secondary containment was not present around the tanks at the site (URS 1994). Samples were not collected during the inspection (EMCON 1996).

4.2.1.5 1990 EPA preliminary assessment

Ecology and Environment, Inc. (E&E) conducted a preliminary assessment of the site on behalf of EPA in 1990 (E&E 1990). Three gasoline and diesel USTs were identified. The USTs were reportedly leased to Evergreen West Wholesale Lumber, Inc., the site tenant. One 10,000-gal (38,000-L) waste oil AST was also identified on-site as being leased to Vintage Oil Company. Front Water Inc., a waste oil recycler, reportedly leased a portion of the site in 1990. Three waste oil USTs, a railroad tank car, and two "partially buried" tanks were identified at the site in 1990. These three tanks all

contained waste oil (Parametrix 1991). E&E recommended additional EPA investigation of the site. No samples were collected during the E&E preliminary assessment (EMCON 1996).

4.2.1.6 1991 Ecology site hazard assessment

A Site Hazard Assessment was performed in May 1991 under MTCA by Parametrix and SAIC (Parametrix 1991). The project site was given a ranking of 1 on a scale of 1 (for highest risk) to 5 (for lowest risk). The site assessment included a review of Ecology's files, Malarkey Asphalt's files, and fieldwork. The scope of the fieldwork included drilling and installation of three monitoring wells (MW-1, MW-2, and MW-3), soil sampling and analysis during the drilling activities, and groundwater sampling and analysis. The fieldwork also included sampling the product in the USTs and above-ground storage tanks (ASTs).

According to the report, the groundwater flow direction beneath the site was to the northeast during high tide and to the east during low tide. Floating product with a measured thickness of approximately 1/8 in was reported in well MW-3. Parametrix and SAIC collected soil, product (from tanks), surface water, and groundwater samples during the assessment. The laboratory results of the samples indicated that metals, VOCs, semivolatile organic compounds (SVOCs) including PAHs, and PCBs were present beneath the site at depths ranging from 1 to 6 ft (0.3–1.8 m) bgs. VOCs, heavy metals, PCBs, pesticides, and SVOCs reportedly were detected in all matrices analyzed. Dioxin was reported in one composited soil sample composited over a depth range of 0 to 5 feet in the monitoring well MW-02 borehole (the original MW-02 was removed as part of the 1999 emergency PCB soil removal action; see Section 4.2.1.15, below). No concentration was reported for TCDD and the sample holding times were deemed unacceptable. No matrix spike/matrix spike duplicate data were provided for the dioxin analysis. The toxicity characteristic leaching procedure results indicated that all sample results were below the Washington State Dangerous Waste Criteria. PCB and PAH soil data collected during the site hazard assessment are summarized in Appendix E (URS 1994; EMCON 1996).

Groundwater samples were collected from each monitoring well and analyzed for several parameters. The laboratory results indicated that PCBs were detected in the samples from each well at concentrations ranging from 1.7 to 77 μ g/L. PAHs (naphthalene) were detected only in the samples collected from MW-3 (at 110 μg/L and an estimated 60 µg/L). In addition to PCBs and PAHs, various metals, pesticides, VOCs, and SVOCs were also detected in groundwater samples. PCB and PAH groundwater data are summarized in Appendix E (EMCON 1996).

4.2.1.7 1992 UST decommissioning

Hart Crowser decommissioned three USTs at the site in 1992 (Hart Crowser 1992; URS 1994). The decommissioned tanks included two 4,000-gal (15,000-L) waste oil USTs, and one 10,000-gal (38,000-L) diesel UST. One 12,000-gal (45,000-L) partially buried

railroad tank car was also decommissioned by removal. Prior to decommissioning, tank contents were pumped out and recycled. The three USTs, which were located under a building, were closed in place by filling with concrete slurry. The contents of the railroad tank car (waste oil) were also pumped out and the contents placed into 55gal (208-L) drums. The railroad tank car was excavated and left on site (URS 1994). Hart Crowser collected three soil samples from beneath each UST before closing the tanks in place and collected soil samples from the former diesel pump and product line area (located off the northwest corner of the building that is north of the tank farm area). The laboratory results indicated that diesel- and bunker C-range petroleum hydrocarbons were detected in one sample collected from beneath one of the 4,000-gal (15,000-L) USTs and in one sample collected from the pump/product line area. The UST samples and the pump/product line area sample also contained total petroleum hydrocarbons (TPH) by EPA Method 418.1 at concentrations of 240 and 790 mg/kg, respectively. Hart Crowser also collected a soil sample from beneath the railroad tank car excavation. This sample contained TPH at 580 mg/kg. Although PCBs were detected in the sludge removed from the railroad tank car (66 mg/kg), the soil sample was not analyzed for PCBs (EMCON 1996). The Hart Crowser report did not include an explanation as to why the tanks were decommissioned.

A letter to Department of Ecology Hart Crowser (Hart Crowser 1991) regarding Malarkey Asphalt Company, 8700 Dallas Avenue South, Seattle WA, 98108 mentioned that Malarkey Asphalt Company and Hart Crowser were pursuing additional investigations at the mentioned property. Since, King County Environmental Division set forth strict deadlines for the decommissioning of the underground storage tanks at the site that was pursued first. The tank decommissioning also coincides with the reduction of the asphalt product manufacturing activities at the site. Malarkey Asphalt Company ceased manufacturing of asphalt roofing materials at the site in 1993 (SECOR 1998b).

4.2.1.8 1994 Ecology dangerous waste site visit – Basin Oil and Malarkey Asphalt

Ecology conducted site visits to the Basin Oil and Malarkey Asphalt Plant on January 12 and 29, 1994. The inspection summary on file with Ecology noted concerns regarding use of the 10,000-gal (38,000-L) storage tank at the Malarkey site and that the department had never been notified of Basin's use of the Malarkey site for processing used oil. Ecology expressed concern regarding the integrity of the tank and the lack of secondary containment for the tank. The report also noted that 500–600 gal (1,900– 2,300-L) of used fuel oil associated with Basin Oil activities were spilled on the Malarkey Asphalt site in October 1993 and that Basin Oil trucks routinely drove their trucks through the pond area near the Malarkey shoreline. There was concern on the part of Ecology inspectors that contaminants on the site, such as PCBs, would be transferred off-site by this vehicle activity. No samples were collected during the inspection.

4.2.1.9 1994 URS site inspection

URS conducted an inspection of the site in 1994 which included on-site and off-site soil, sediment, groundwater, and surface sampling. This work was conducted for EPA as a result of concerns regarding potential surface and groundwater contamination and on-site exposure identified in the preliminary assessment (Ecology & Environment 1990). URS collected three surface soil samples at depths ranging from 0 to 0.5 ft (0.15 m) bgs at locations where wastes were suspected (mainly near the former railroad tank car location and around the ponding area). Three additional samples were collected at the same locations at depths ranging from 1.5 to 2 ft (0.5–0.6 m) bgs. PCBs were detected in all three surface soil samples at concentrations ranging from 18 to 120 mg/kg. Subsurface soil samples also contained PCBs up to 180 mg/kg. PAHs were also detected in all three surface soil samples at concentrations up to 0.884 mg/kg chrysene. PAHs were only detected at depth in two of the three sampling locations (EMCON 1996). PCB and PAH results for soil samples collected during the URS inspection are summarized in Appendix E.

URS also collected groundwater samples from the three monitoring wells and one surface water sample near the LDW in 1994. PCBs were detected in all three monitoring well samples at concentrations ranging from 0.99 to 179 μ g/L. PCBs were not detected in the seep sample. PAHs were detected only in the groundwater sample collected from MW-3. Other constituents detected in the groundwater samples include VOCs, SVOCs, pesticides, and metals. PCB and PAH results for groundwater and surface water samples are provided in Appendix E. None of the monitoring wells was reported as containing free floating product at the time of the URS investigation (EMCON 1996).

One sediment sample was also taken in the tidal flat immediately offshore of the site (location 6645 on Figure 4-1).

4.2.1.10 1995 EPA sampling

E&E collected soil and water samples on behalf of EPA in 1995 (E&E 1996). E&E collected seven surface soil samples from locations near the ponding area, the former railroad tank car, and storm drain ditches. Sampling depths are not known but assumed to be less than 0.5 ft (0.15 m). E&E also collected one water sample from inside a sump. The laboratory results for these samples indicated that PCBs were detected at concentrations between 11 and 40 mg/kg in soil and at 5,800 μ g/L in the water sample collected from the sump. SVOC analyses were run on the water sample only. The results indicated that phenanthrene was the only PAH detected (estimated concentration of 410 μ g/L; EMCON 1996). Soil and water PCB and PAH data are summarized in Appendix E.

4.2.1.11 1995 asbestos abatement work

Asbestos abatement work was performed at the Malarkey Plant site in August 1995 by Restec Contractors, Inc., of Redmond, Washington as part of the Malarkey Company's



compliance with the Administrative Order on Consent for Removal Action issued by EPA effective April 26, 1996. Construction monitoring was performed by David Evans and Associates, Inc., of Portland, Oregon and air monitoring and final containment inspection were performed by Pacific Rim Environmental of Tukwila, Washington (SECOR 1998a). Documentation of this action is included as Appendix D of the Draft Removal Action Work Plan (EMCON 1996).

4.2.1.12 1996/1997 Malarkey Asphalt Plant decommissioning

In 1996, EMCON prepared a removal action work plan for additional work in response to the Administrative Order on Consent (AOC) for Removal Action between EPA Region 10 and Malarkey Asphalt Company (April 26, 1996). Activities addressed in the work plan included additional asbestos survey and abatement for the asphalt plant, interim stormwater controls, plant tank and equipment decommissioning, and hot spot soil removal. The plan also described proposed additional investigations of the former pond ("roadway") area and the plant tank farm. The asbestos abatement and plant decommissioning activities were performed in accordance with the approved work plan between May 1996 and December 1997. The work include asbestos abatement for several tanks, a boiler, and associated piping, valves, and gaskets. Interim stormwater controls, including an asphalt diversion berm and a gravel filter, were installed at the site as specified in the work plan. Twenty-three aboveground tanks were cleaned and removed from the site. Tanks and contents were inventoried, contents were sampled, and procedures for cleaning were developed. Two tanks that served as blowing stills (Tanks T-12 and T-14) were cleaned and retained for future use. All other tanks were demolished and shipped off-site for recycling. Extensive disassembly and cleaning of plant piping and equipment was also conducted (EMCON 1996; SECOR 1998a).

4.2.1.13 1997 SECOR focused site characterization

In response to the 1996 AOC, SECOR conducted a focused site characterization at the Malarkey site for the Malarkey Asphalt Company's legal counsel. The work was based on the Draft Removal Action Work Plan (EMCON 1996) and subsequent refinements agreed to with EPA. The scope of work included subsurface (core) soil sampling from grid locations in the former ponding "roadway" area (Port property), soil sampling from the ditch area, subsurface soil sampling from five locations at a former waste oil storage tank (UST), collecting subsurface soil samples from one monitoring well borehole and completing the well as MW-4, and conducting groundwater monitoring in all four groundwater monitoring wells. Soil and water samples were analyzed for PCBs, PAH, petroleum hydrocarbons (TPH), chromium, lead, and zinc. Results indicated that PCBs were present in shallow soil throughout the ponding "roadway" area on the Port property. PCB concentrations ranged up to 531 mg/kg. PAHs were not detected above the then-established Method C industrial cleanup levels and were not considered to be chemicals of concern. Results for soil sampling near the waste oil UST found PCBs at less than 20 mg/kg, and investigators concluded that soil removal

was not necessary. PCBs were detected in some locations up to 40 mg/kg at less than 1 ft (0.3 m) depth, indicating the need for localized shallow soil removal. Aroclor 1260 was detected in groundwater from monitoring wells MW-2, MW-3, and MW-4 at concentrations ranging from 0.561 to 54.3 μ g/L. No PCBs were detected in MW-1. SECOR noted that "reported PCB concentrations may be exaggerated by PCBcontaminated soil particulate entrained in the groundwater samples and thus not accurately reflect PCB concentrations in groundwater."

4.2.1.14 1998 focused feasibility study

SECOR prepared a Focused Feasibility Study (SECOR 1998) based on earlier investigations and the results of the site characterization efforts. This study was required under the 1996 AOC and was prepared for the Malarkey Asphalt Company's legal counsel. According to SECOR, the feasibility study was performed to evaluate potential cleanup actions for the site. Due to limited groundwater impact, the feasibility study focused primarily on shallow soil and control of stormwater and associated erosion/particulate transport. SECOR concluded that the groundwater migration pathway at the site was "not substantial, due to the low solubility and mobility characteristics of PCBs and as evidenced by the groundwater data collected to date." The study evaluated the following four remedial alternatives:

- ◆ Alternative 1 No action
- ♦ Alternative 2—Miscellaneous surface remediation tasks, grading, asphalt cap, stormwater control, monitoring, and institutional controls
- ◆ Alternative 3 Miscellaneous surface remediation tasks, soil excavation and offsite landfill disposal, grading, asphalt cap, stormwater control, monitoring, and institutional controls
- ◆ Alternative 4 Miscellaneous surface remediation tasks, soil excavation and offsite incineration, grading, gravel cap, stormwater control, monitoring, and institutional controls.

The evaluation resulted in the selection of Alternative 3, which was determined to be an effective means of protecting human health and the environment. SECOR also developed a PCB soil cleanup level of 131 mg/kg for the site, based on State of Washington risk calculation procedures and toxicity factors in use at the time. SECOR used the state's "Method C" procedure which considers exposure assumptions for industrial property and does not include potential exposure to surface water.

4.2.1.15 1999 utility corridor sampling

Seven soil samples were obtained from three boreholes located along a former Malarkey plant utility/pipeline corridor extending from the plant area toward the south building (Onsite 1999). Samples were obtained to determine whether PCB concentrations in excess of the soil removal project remedial action objective of 25 mg/kg were present in soil along the corridor alignment. PCB concentrations

ranged from 0.77 to 15 mg/kg as Aroclor 1260 (no other Aroclors were detected). It was noted that one sample consisting almost entirely of asphalt contained the least amount of PCB (0.77 mg/kg). This work was done as part of the scoping for the subsequent PCB soil removal/containment action.

1999 Port of Seattle PCB soil removal/containment action

The Port of Seattle, under EPA oversight, implemented the removal and containment of PCB-contaminated soil in the upland portion of the T-117 and Malarkey Asphalt Site in the fall of 1999 (Onsite 2000b). The work included the removal and treatment of impounded stormwater in the "roadway pond" area, excavation and disposal of over 2,000 tons of PCB-contaminated soil, backfilling, installation of storm drain improvements, and site paving. The soil removal criterion for the project was 25 mg/kg. The excavation plan relied on previous borehole testing performed by SECOR to define the required depths and areas of removal. Verification testing was performed in soil removal grids where PCB concentrations in the deepest SECOR borings still exceeded the removal criterion. Soil was tested until the removal criterion was met. For example, sample SG-A2SW-3.0 indicated a PCB concentration of 130 mg/kg at a 3.0-ft depth. Subsequent sampling at the final depth of 5.0 ft (sample SG-A2SW-5.0) indicated a confirmatory residual concentration of 0.28 mg/kg. Three shallow monitoring wells (MW-2, MW-3 and MW-4) were abandoned to allow for excavation and were replaced once the project work was completed. A water supply well located at the site (referred to in some reports as a "sump") was also abandoned after it was inspected and determined not to contain product. Work was performed under a scope of work approved by EPA Region 10. Health and safety procedures and extensive air monitoring were implemented during the excavation work to assure protection of site workers and the public. The completion of this work resulted in the present-day configuration of the site as an operating Port of Seattle terminal. Soil removal in the "roadway pond" area was successfully completed

2003 groundwater sampling 4.2.1.17

The three on-site groundwater monitoring wells (MW-2, MW-3, and MW-4) and one upgradient well (MW-1) were sampled in May 2003 and groundwater samples were analyzed for PCBs, PAHs, total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and total xylenes (BTEX) (Onsite 2003). No product accumulations were observed in any of the wells. Chemicals of concern were only detected in monitoring well MW-03 and these were limited to diesel-range TPH (0.79 mg/L), lube oil-range TPH (1.4 mg/L), and six PAHs at concentrations ranging from 0.013 to 1.6 μ g/L. PCB Aroclors, gasoline-range TPH, and BTEX were not detected in any of the wells.

4.2.1.18 2003 Seattle Public Utilities outfall inventory/survey

The City of Seattle is currently assembling an inventory of outfalls along the LDW as part of the work conducted for LDWG (Schmoyer 2003). This work includes locating and surveying all outfalls to the waterway, including those located along the study area. The results of this work should be available from the City in the near future.

4.2.2 **Basin Oil Plant**

Previous investigations at the Basin Oil Plant consist primarily of site visits and inspections for compliance with state dangerous waste rules. No environmental sampling activities have been reported for this facility in the available agency documentation. The results of the compliance inspections and site visits are summarized in the following paragraphs.

4.2.2.1 1992 Ecology dangerous waste compliance inspection – Basin Oil Plant

Ecology inspectors visited the plant in December 1992 and another Basin Oil facility at 8620 14th Avenue South on April 1993 and indicated several areas of non-compliance in their report for the two facilities (Ecology 1993b). In addition to concerns regarding discrepancies in record keeping and manifests, Ecology noted that large volumes of wastewater are generated from oil processing and "pad wringing." The report indicated concerns regarding disposal of wastes generated at the sites (the report does not always indicate which of the two sites is the subject of the particular concern). Consequently Ecology requested Basin Oil to keep daily logs of the volumes of wastewaters generated at both the Dallas Avenue and 15th Avenue South facilities and to maintain records of testing results and disposal methods for each batch. Ecology also recommended that the contents of various tanks at the facility (location not specified) be labeled. No samples were taken during the inspection. The Ecology report states that, at the time, the plant (specific plant not specified) processed waste oil, oil filters, antifreeze, oil/water separator "cleanouts," water soluble machine shop "coolants," and oily water from bilges. Frontwater Services, a waste transporter, also reportedly shared the site (at Dallas Avenue) with Basin Oil.

4.2.2.2 1994 Ecology dangerous waste site visit—Basin Oil and Malarkey Asphalt

Ecology conducted site visits to the Basin Oil and Malarkey Asphalt Plant on January 12 and 29, 1994. The inspection summary on file with Ecology noted concerns regarding use of the 10,000-gal (38,000-L) storage tank at the Malarkey site and that the department had never been notified of Basin's use of the Malarkey site for processing used oil. Ecology expressed concern regarding the integrity of the tank and the lack of secondary containment for the tank. The report also noted that 500-600 gal (1,900-2,300-L) of used fuel oil associated with Basin Oil activities were spilled on the Malarkey Asphalt site in October 1993 and that Basin Oil trucks routinely drove their trucks through the pond area near the Malarkey shoreline. There was concern on the part of Ecology inspectors that contaminants on the site, such as PCBs, would be transferred off-site by this vehicle activity. No samples were collected during the inspection.

4.2.2.3 1995 Ecology dangerous waste compliance inspection—Basin Oil Plant

Ecology inspectors conducted a Dangerous Waste Compliance Inspection in September 1995 at the Basin Oil Plant and determined that there were no violations of the dangerous waste regulations.

4.2.2.4 1995 EPA complaint alleging violation of Clean Water Act—Basin Oil Plant

EPA issued a formal complaint against Basin Oil Company in October 1995 alleging violation of the Oil Pollution Prevention Regulations under 40CFR112 promulgated under Section 311(j) of the Clean Water Act (EPA 1995). Specifically, EPA noted that the company was leasing a 10,000 gal (38,000-L) tank ("Tank M") located in the Malarkey Plant area for storing used oil and did not disclose this activity in the facility SPCC Plan.

4.2.2.5 2000 Ecology dangerous waste compliance inspection—Basin Oil Plant

Ecology conducted a Dangerous Waste Compliance inspection at the Basin Oil Plant in September 2000 and noted several areas of noncompliance, including issues with labeling and marking, compatible/closed containers, and secondary containment. No samples were taken during the inspection. Basin Oil responded to Ecology with a summary of completed and planned corrective actions (EMR 2000).

4.2.2.6 2002 Ecology dangerous waste compliance inspection—Basin Oil Plant

Ecology conducted a Dangerous Waste Compliance inspection at the Basin Oil Plant on December 18, 2002 and noted several areas of non-compliance. Issues included addressing the integrity of used oil tanks, condition of secondary containment, and designation of a solid waste prior to disposal. No samples were taken during the inspection (Ecology 2003).

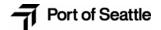
4.2.3 **Boeing South Park**

The only information obtained for the Boeing South Park site was found in a MTCA Release Report (Boeing 1998). Ecology records indicate that a reportable MTCA release was discovered at the facility in November 1997. According to the report, hydraulic oil was observed leaking from an elevator inside Building 15-01. Oil leaked into the elevator jack casing, a boring extending approximately 15 ft (5 m) below the bottom of the elevator pit. Boeing estimated that approximately 50 gal (190 L) of oil had been released and initiated recovery actions by extracting oily water from the jack casing. No additional records regarding this incident were included in the files provided by Ecology.

4.2.4 Summary of upland investigation findings

Of the studies described in the previous sections, the following included sampling of soil, groundwater, or surface water:

◆ 1984 Metro Inspection (as cited in URS 1994)



- 1985 and 1986 Ecology Inspections (as cited in URS 1994)
- 1989 EPA TSCA Inspection (as cited in Hart Crowser 1992)
- ◆ 1991 Ecology Site Hazard Assessment (Parametrix 1991)
- ◆ 1992 UST Decommissioning (Hart Crowser 1992; URS 1994; EMCON 1996)
- ◆ 1994 URS Site Inspection (URS 1994)
- ◆ 1995 EPA Sampling (E&E 1996, as cited in EMCON 1996)
- ◆ 1997 SECOR Focused Site Characterization (SECOR 1997)
- ◆ 1999 Utility Corridor Sampling (Onsite 1999)
- ◆ 1999 Port of Seattle PCB Soil Removal/Containment Action (Onsite 2000b)
- 2003 Groundwater Sampling (Onsite 2003)

Table 4-9 and Appendix E provide summaries of environmental investigations and data at T-117 and adjoining properties. Many of the sampling data obtained during these studies are no longer representative of site conditions, or the exact location of the sample was not adequately documented. While samples of tank contents and sludges indicate the historical presence of PCBs and PAH source materials in the Malarkey Plant vicinity, these source-related structures and materials are, for the most part, no longer present. Also, much of the subsurface soil testing results for the shoreline "roadway" parcel and ditch area at T-117 reported in SECOR (1997) are no longer representative, as PCB-contaminated soils were subsequently removed from these locations in 1999. The summary table in Appendix E indicates whether sampling data are believed to represent existing conditions. Although groundwater results are also highly variable and may not represent current site conditions, they are included in this summary in an effort to provide an historical perspective to measured groundwater quality. It is important to note that accepted groundwater sampling techniques have evolved during the past 5 to 10 years and that older groundwater sampling events likely included contaminants entrained on fine sand and silt particles (a problem noted by at least one previous investigator).

No additional groundwater monitoring data at the properties immediately adjacent to T-117 is known. Ecology records show that there are UST and other types of sites in the greater South Park area (i.e., several sites to the west) which were considered outside the study area and had limited potential for impact on the T-117 site since they were not in neighboring properties (i.e., Boeing, Basin Oil, South Park Marina).

The following conclusions can be drawn, based on the foregoing history of investigations and actions at sites located in the upland portion of the project area:

◆ Current groundwater contamination at T-117 adjacent to the shoreline is probably minimal, although no monitoring wells are located at the Basin Oil, South Park Marina, or Boeing properties to verify the absence of contamination in these areas. Some releases to groundwater from historical spills have been

noted, but contamination appears to be limited to the central portion of T-117 vicinity and consists of diesel-range and lube-oil-range hydrocarbons and traces of PAH. Earlier studies reported PCBs in groundwater, although sampling techniques were probably such that PCB-contaminated particulates were likely entrained in the samples which thus did not represent true chemical conditions in the aquifer. During the most recent monitoring event in 2003, detected chemicals of concern were limited to diesel-range TPH, lube-oil-range TPH, and PAHs. PCB Aroclors, gasoline-range TPH, and BTEX were not detected in any of the wells. No product accumulations were observed in any of the wells. PCBs are not expected to migrate in site groundwater due to their extremely hydrophobic chemical nature.

- PCB and PAHs have been routinely detected in soil samples from the T-117/Malarkey Plant vicinity and likely originate from past industrial activities in the vicinity of the Malarkey Plant. Removal of PCB-contaminated soil to concentrations at or below the soil removal criteria of 25 mg/kg addressed the cleanup level established for the removal action in the roadway area of the site. However, past investigations have not examined the potential presence of PCBs in the shoreline berm soil or in sediment washing onto the terminal area from upgradient areas (i.e., Dallas Avenue South). Soil sampling data representative of current conditions include the deepest soil core sample obtained by SECOR (1997) with concentrations generally at or below the 25 mg/kg soil removal criteria and the soil removal verification results for the 1999 soil removal in the Port roadway area (Onsite 2000b). Except for the unpaved shoreline berm area and south drainage ditch (between T117 and Boeing), any soil still present at the T-117 has been covered over with or asphalt or concrete pavement (Figure 2-4).
- Historical spills of petroleum products have been noted in the vicinity of T-117. These include a release of 500–600 gal (1,900–2,300 L) of used oil from a tank being used by Basin Oil at the Malarkey Plant Site in the mid 1990s; chronic spillage and leakage of oil from the Malarkey Plant equipment and pipes; and potential releases from former underground and above ground storage tanks. One or more of these historical releases are the likely source of TPHs recently observed in MW-3 at T-117. However, the absence of PCBs in MW-3 is an indicator that they are not being mobilized in the groundwater by the TPH component.
- Asphalt material has been observed in the subsurface soil in the vicinity of the former Malarkey Asphalt Plant (Onsite 2000b). This material is believed to originate from spills and leakage of heated material from tanks and pipes during the plant era. This material is believed to be relatively inert and, according to one analysis, contains low or negligible PCBs. While some longterm weathering of this material could potentially contribute to groundwater contamination, most of the material is located above the saturated zone in the

- upland area and infiltration is minimized by the overlying asphalt cap. Asphalt wastes deposited in the shoreline berm are exposed to the weather and may be imparting contamination to adjacent river sediment.
- ◆ Most of the historical industrial practices or investigation results suggesting a potential to impact adjacent media are in the general T-117/Malarkey Plant and Basin Oil Plant vicinities. Few if any related activities were noted in the case history regarding the Boeing South Park site or the South Park Marina, with the exception of a closed-loop boat washing facility (see Section 5.2.3.4) and a stormwater discharge (oil/water separator) located at the latter site covered under Washington State's general boatyard NPDES permit. Regulated parameters listed in the discharge monitoring reports for the separator outfall include oil and grease, total recoverable copper, and total suspended solids. None of the discharge monitoring reports obtained from Ecology records indicated exceedances of the monitoring parameters in the column marked "No. of exceedances."
- ◆ Previous investigators have occasionally observed petroleum product accumulations in some of the T-117 upland area groundwater monitoring wells, probably associated with historical releases from underground tanks and piping. Hart Crowser (1992) noted that floating product with a thickness of less than 1/8 inch was detected in monitoring well MW-3 during the Ecology Site Hazard Assessment. URS (1994) sampled wells MW-1, MW-2 and MW-3 (MW-4 was installed later) and did not detect floating product in any of the three monitoring wells. During the July 1997 monitoring event, Secor (1997) observed a "petroleum hydrocarbon-like film" on the water surface in MW-3 and a hydrocarbon-like odor was noted at the wellhead during the October 1997 sampling event.

5.0 Potential Sources of Contamination

This section discusses potential sources of contamination based on sediment chemistry in the aquatic environment and historical and current site activities within the upland portions of the site.

5.1 AQUATIC

Sediments adjacent to the project site were sampled during two investigations in 1997 (Exponent 1998; NOAA 1998) and one in 1998 (Weston 1999). The PCB data from these samples represent the potential PCB source from the sediment near and within the T-117 EAA.(Table 4-1), Sediment from five sampling locations close to the T-117 shoreline had PCB concentrations in excess of the CSL. Sediment from four other locations had PCB concentrations that exceeded the SQS, but not the CSL. These samples were collected further offshore from T-117, thus indicating a gradient of PCB concentrations consistent with a shoreline source of PCBs.

The two sediment samples collected immediately upstream of the project site had PCB concentrations below the PCB CSL.

No PCB sediment data are available from the area immediately downstream of the project site, at the southern end of the marina. Further downstream, at the northern end of the marina, the PCB sediment concentrations are below the PCB SQS. Additional sediment data are needed from within the marina before conclusions can be reached regarding the presence of PCBs downstream of the site.

5.2 UPLAND

This section describes upland site characteristics, activities, and information used to assess the potential for chemical presence and migration to the LDW. The history of dredge and fill activities is presented, along with information on historical and current commercial and industrial activities. In addition, potential pathways for chemical migration to the waterway are discussed.

5.2.1 Dredge and fill activities

The LDW shoreline in the vicinity of the T-117 area prior to additional filling by USACE was likely located more or less parallel to the east side of the former Malarkey Plant area in the vicinity of the east retaining wall (Figure 3-3). One anecdotal reference (Atkins 1991) indicates that the land in the project area used to be a floodplain before USACE modified the shoreline. A history of dredging and filling in the LDW vicinity (Sweet Edwards 1985) indicates the present day channel was constructed in 1918 and that a former river oxbow extending northwest from the project area shoreline was filled (Figure 2-2). The Real Estate Survey of Seattle dated 1912 shows the established upland parcels of South Park Heights west of Dallas Avenue South and the proposed "Ship Canal" boundaries offshore of Dallas Avenue South. The west boundary of the map more or less conforms to the original canal boundary seen in the earliest available aerial photograph (1936) and described by various historical sources. A bench (lower-elevation upland) is observed in the 1936 aerial photograph between this original "cut line" and the river tidelands, possibly placed there during early channel dredging activities or during excavation of the original canal. Subsequent aerial photographs show evidence of dredged materials and fill continuing to be deposited along the river shoreline and upland areas of the site. An aerial photograph from 1946 shows a row of piling in the tidal area that likely comprise the deteriorating bulkhead that can be observed today at the base of the riprap offshore of the north half of T117 EAA. A detailed description of observations taken from the historical aerial photographs is included in Appendix D.

According to earlier investigators, the US federal government used property near T-117 during the early to mid-1940s (Hart Crowser 1992). The specific nature of these activities and operations was not reported. However, it was noted that USACE may have used the T-117 shoreline area to deposit dredge material generated from the LDW in the 1950s (URS 1994). M. Malarkey, owner of Malarkey Asphalt, also noted

that in the 1950s, during the early asphalt manufacturing operations, USACE dredged the LDW channel and deposited the dredged material on the banks of the LDW (URS 1994). Ecology records also indicate additional dredged material disposal in the vicinity of T-117 sometime in the 1970s. USACE dredged the LDW and placed the sediments on the property during that period, according to a former Malarkey Asphalt Plant representative (Atkins 1991).

5.2.2 Historical commercial and industrial activities

Information on historical industrial and commercial activities in the vicinity of T-117 was compiled from the following sources:

- Environmental Data Resources, Inc. (EDR) historical topographic maps, Sanborn Maps, city directory listings, and aerial photo searches
- Previous investigations
- Historical maps (i.e., Kroll maps and historical topographic maps)
- Map of waste disposal and dredge fill sites along the Duwamish Waterway (Figure 5-1)(Sweet Edwards 1985)
- Historical city directories for Seattle (Polk's Seattle City Directory and Cole Directory for Greater Seattle for various years between 1939 and 1999)

Aerial photographs for the project area were available from several sources (EDR 2003; EPA 1982; Walker and Associates 2003). The photographs show a succession of industrial and commercial development in the area, beginning after 1936. The photographs also reveal historical modifications made to the shoreline areas and upland fill and grading activities. The aerial photographs from Walker and Associates were the most reliable for purposes of evaluation and were obtained for the years 1936, 1946, 1956, 1960, 1969, 1974 and 1980. Appendix D provides a detailed summary of observations from this collection.

Industrial activities along the T-117 portion of the LDW date back to the decades immediately following river channelization by the Duwamish Waterway District in the early 1900s. The early photograph for 1936 shows little evidence of commercial or industrial development, and none is mentioned in the historical city directories until some time after 1939. The property that is currently T-117 was owned by various entities until 1999, when the Port acquired the parcels between Dallas Avenue South and the Port's original holdings along the river. Those parcels belonged to Duwamish Properties and included the site of the Malarkey Asphalt Company's operations. Basin Oil (currently located west of Dallas Avenue South) reportedly used some of the tanks in the area.

Three historical Sanborn Maps, dated 1929, 1950, and 1967, were obtained for the project area (EDR 2003). The earliest map (1929) shows the presence of two singlefamily structures and a private garage located on the land between Dallas Avenue South and the waterway, at the present-day location of T-117. Two private garage

structures are also noted in the present-day vicinity of South Park Marina. The largest of five parcels in the area that is now the Basin Oil plant was also occupied by a singlefamily structure (probably the same structure currently used by Basin Oil for its offices). Dallas Avenue extended further to the south (beyond the intersection with Donovan Street) where it eventually intersected with 18th Avenue South. It is likely that 18th Avenue South was later vacated, as it traverses the current location of the Boeing South Park facility. Three single-family residences are shown at 8609, 8619, and 8627 17th Avenue South (the east side of 17th Avenue, west of the present-day Basin Oil location). The structure shown at 8627 was at the present-day location of the chocolate factory. A single-family structure was also shown at the present-day location of the South Park Marina dry boat storage area at the intersection of 18th Avenue South and Dallas Avenue South. A notation along the shoreline of the LDW mentions "numerous house boats" near the present-day location of the South Park Marina boat slips. There is little evidence of industrial activity.

The 1950 Sanborn Map indicates the presence of several industrial activities east and northeast of Dallas Avenue South at the present-day location of the marina and T-117. The map denotes the presence of "Duwamish Manufacturing Co. - Asphalt Manufacturing" at the site eventually known as the Malarkey Asphalt plant. Seven horizontal storage tanks are shown at this location. Two are labeled as steel oil tanks positioned on an elevated steel frame. Others are labeled as "oil distilling" and another is labeled as "heated." Also shown in the map are three vertical steel crude oil tanks positioned on a wood base located at the waterway shoreline northeast of the asphalt plant. These three tanks probably correspond to three nearshore tanks shown on the 1949 "Seattle South" 7.5 minute topographic map (EDR 2003). The map also shows the presence of a large commercial structure on the present-day marina property labeled "Steel Barrel Refurbishing and Cleaning." It is likely that this is the same location of the A and B Barrel Company given as site number 29 in Figure 5-1 (Sweet Edwards 1985). Except for some minor changes in the single-family structures along 17th Avenue South, the residential vicinity is relatively unchanged from that shown on the 1929 map.

The 1967 Sanborn Map shows the addition of three buildings in the vicinity of the asphalt plant (still labeled as "Duwamish Manufacturing Co. - Asphalt Manufacturing"). Two long and narrow warehouse structures positioned along the east side of the plant area are shown and are labeled as "storage." Another structure, near the present-day location of the Port Construction Services office at T-117, is labeled "tar storage." Open areas at the south and north ends of the present-day T-117 facility are labeled "trailer park" and "auto & boat parking," respectively. The barrel processing facility formerly shown on the 1950 map is no longer present. An additional small single-family structure appears in the north parcel of the present-day Basin Oil location. There is no evidence of tanks or other industrial features at the present-day Basin Oil location or elsewhere in the project area.

Historical industrial and commercial activities at T-117 and the surrounding properties are listed in Table 5-1 and are shown on Figure 5-2.

Table 5-1. Historical sites and industrial/commercial activities located within the T-117 study area upland drainage basins

SITE/ FACILITY NAME AND ESTIMATED PERIOD(S) OF OPERATION	ADDRESS OR APPROXIMATE LOCATION	IDENTIFIED PROCESSES	STORMWATER DISCHARGE POINT	POTENTIAL CHEMICALS ASSOCIATED WITH OPERATION
Malarkey Asphalt Company/Duwamish Properties/Duwamish Mfg. Co. (1937–1993)	8700 Dallas Avenue South (upland parcels east of Dallas Avenue)	asphalt roofing material manufacturing. asphalt material storage; oily water separation; petroleum storage	outfalls and shoreline overflow points along T-117; south drainage ditch between T-117 and Boeing South Park	PCBs, TPH, PAH
Port of Seattle Shoreline Parcel (1900s – 1999)	8700 Dallas Avenue South (parcel east of Malarkey Asphalt plant, immediately adjacent to river	unused; Malarkey asphalt used property as drain field for oil water separator; misc. equipment and vehicle storage	outfalls and shoreline overflow points along T-117	PCBs, TPH, PAH (from adjacent Malarkey operations) possible low concentrations of metals from dredged materials
Evergreen West Wholesale	8700 Dallas Avenue South (north end of T117)	untreated lumber storage and loading; untreated lumber wholesale	outfalls and shoreline overflow points along T-117	none
Allied Bolt Company (1980s to 1990s)	8619 17th Avenue South and 8620 16th Avenue South	bolt manufacturing?	catch basins in 17th Avenue if maintained, otherwise to South outfall at T-117	VOCs (identified in manifest data), metals
Fasteners, Inc. (late1990s)	8620 16th Avenue South	distributor of nuts, bolts, and screws	City of Seattle combined sewer system	VOCs, metals
A and B Barrel Company (1950s)	8604 Dallas Avenue South	barrel cleaning and refurbishing	unknown – current vicinity of South Park boat yard	oil, grease, sodium hydroxide, VOCs
N. Star Trading Co. Evergreen Boat Transport R.P. Boatbuilding Dekker Engineering South Park Mobile Homes	8604 Dallas Avenue South	miscellaneous trades and commercial activities; mobile home park (Polk and Cole Directories)	storm drains in vicinity of South Park Marina	unknown
Dredged Material Disposal areas (1940s-1970s)	T-117 shoreline	dredged material dewatering/disposal	indirect – erosion and seepage to shoreline area	mercury and other metals (believed to originate from background sources in the watershed)

Chemicals listed as "potential" in Table 5-1 are those that are known to be historically associated with similar industrial/commercial operations but have not necessarily been documented or measured at the particular listed site/facility.

Previous investigations and other background information pertaining to each site or facility are described in the following sections.

5.2.2.1 T-117- Duwamish Properties Inc./Malarkey Asphalt Company

Features at the site prior to the 1999 soil removal and paving action included a small office building, warehouses, storage sheds, concrete foundations of former buildings, storage areas, and asphalt-paved driveways. The site did (and does) include several parcels, including parcels A and B owned by Duwamish Properties and later transferred to the Port of Seattle. A 60-ft-(18-m)-wide strip of property (approximately 0.8 ac) located between upland parcels A and B and the LDW was (and is) owned by the Port as successor in interest to the Duwamish Waterway District. Parcels A and B were the location of historical operations of the Malarkey Asphalt Company and other periodic tenants or operators, including Basin Oil. The Port-owned shoreline parcel, the location of the roadway "pond," was the focus of most of the contaminated soil removal (Onsite 2000b). Locations of the various parcels are shown in Figure 5-3.

The Duwamish Manufacturing Company reportedly began asphalt manufacturing operations at the site around 1937 and continued until 1978 (URS 1994) at the general location corresponding with the present-day west half of T-117 on parcels known as "A and B." In 1978, the two parcels were purchased by Michael O. Malarkey and roofing asphalt manufacturing continued (URS 1994). The business came to be known as Malarkey Asphalt Company and continued roofing asphalt manufacturing operations at the site until 1993. The parcels were then owned by Duwamish Properties, which sold them to the Port when they were combined with the Port's previous holding (the "roadway" parcel to the east, just inland of the shoreline berm) to form the present-day T-117. Prior to the sale of the parcels to the Port, Evergreen West Wholesale Lumber Inc. leased the area for untreated lumber storage and loading operations. Prior to 1978, waste oil was reportedly used on site to fuel certain equipment and included PCB-containing transformer oils (SECOR 1998).

Tanks at the plant were inventoried prior to plant dismantling activities in late 1996 and 1997. The plant configuration and description of tasks are shown in Figure 5-4 (EMCON 1996). An extensive inventory of plant equipment was assembled by Malarkey Asphalt Company and is included in Appendix F of the Removal Action Work Plan prepared for the company in 1996 (EMCON 1996).

During the oil embargo in the early 1970s, the facility reportedly received approximately 1,000 gal (3,800 L) per month of waste oil, including PCB-contaminated waste oils. The waste oil was used as fuel for the asphalt manufacturing process (Hart Crowser 1992; URS 1994). This practice apparently continued until the oil embargo was lifted and oil prices stabilized. Oil was reportedly placed in a former railroad tank car located at the site (URS 1994).

During the MCW/Malarkey Asphalt Company operations, flux⁷ was received from the Chevron facility at Richmond Beach, Washington (URS 1994). The product was blown to approximately 500 °F to drive off light-end hydrocarbons. An estimated 500-600 gal (1,900-2,300 L) of these light oils were generated (vaporized) off the blowing tills per month. A fume incinerator/afterburner was operated to burn the vaporized oil, which was routed to the unit via overhead piping. Once the targeted physical properties were achieved, the asphalt was transferred from the blowing stills to various tanks and cooled. A hot oil heater was used to keep the asphalt from hardening in the lines. It was operated 24 hours per day to keep hot oil circulating through jacketed piping (EMCON 1996).

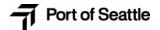
An unlined holding pond, actually a low depression in the shoreline roadway area just inland of the shoreline berm, was reportedly used for some period of time during site operations (URS 1994) for non-contact cooling water from the stills (Hart Crowser 1992). However, EMCON was not able to substantiate the presence of a storage structure as reported by URS and Hart Crowser. According to EMCON, the site owner advised them that the non-contact cooling water was not generated during asphalt processing operations; i.e., the non-contact cooling water evaporated off the blowing stills as steam. Excess water was captured in the containment structure in which the blowing stills and overflow tank were located. A sump pump was then used to pump water from the containment area to a holding tank, where it was then reused for cooling. The area reported as a former holding pond was (and continued to be up until 1999) a depressed area of the site where stormwater collected. Periodic overflow to the LDW was noted by EMCON during extended rainy periods. This ponding area was located on the property owned by the Port (EMCON 1996) but was subsequently excavated as part of the PCB-contaminated soil removal action in 1999 and backfilled (Onsite 2000b).

Correspondence included in Ecology records mentions the presence of boat builders operating somewhere on the Malarkey site. In a 1991 letter to the Fire Marshal, the company stated: "The boat builders have vacated the premises and the related structure has been removed" (Malarkey 1991). The period(s) of operation, specific location and nature of the mentioned structure associated with the boat builder are unknown.

5.2.2.2 Allied Bolt Company/Fasteners, Inc.

Allied Bolt Company was located at 8619 17th Avenue South as listed in the EPA facility database for hazardous waste generators. The historical directory for Seattle listed the historical business location at 16th Avenue South. The business probably occupied both properties, which are adjacent to each other. The facility was likely in

⁷ Asphalt flux is the residuum of atmospheric and vacuum distillation processes used by petroleum refineries and independent asphalt manufacturers. It is used in the manufacture of some asphalt roofing materials (e.g., saturant asphalts, some modified bitumen products), and is also used as a feedstock in the air-blowing process used to make oxidized roofing asphalt



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the same buildings as the present-day Seattle Chocolate Company occupies at 8620 16th. Facility data indicate that the Standard Industrial Classification code (3541) is for screw machine products. Generator information lists 1,357 lb of waste combustible liquid (N.O.S. [not otherwise specified] mineral spirits) and 440 lb of RQ (reportable quantity) waste flammable liquid (N.O.S. aliphatic & aromatic hydrocarbons) for 1993. No other information is available for this business but it is not still operating at either of the specified addresses. The historical Seattle city directories indicate that Allied Bolt Company operated at 8620 16th Avenue South during the 1980s and 1990s. According to information contained in EDR (2003) the business is a small quantity generator and no violations were noted in association with this business location. Fasteners, Inc. was reported at the 8620 16th Avenue address in 1999.

According to information contained in EDR (2003) the business is a small quantity generator and no violations were noted in association with this business location. The Seattle city directory of 1999 indicated that Fasteners, Inc. occupied the facility at 8620 16th Avenue South as of 1999. This is the present-day location of the Seattle Chocolate Company.

5.2.2.3 A and B Barrel Company

This facility was identified during Metro's Duwamish groundwater study (Sweet Edwards 1985) and was reportedly located at 8604 Dallas Avenue South (the same address as South Park Marina) sometime in the mid 1950s. According to the report, the company used about one ton per month of sodium hydroxide as a cleaning agent to recondition used barrels and drums. Liquid waste, including oils, grease and sodium hydroxide were discharged into a small pond which discharged directly into the LDW. Wastewater concentrations contained 940 mg/L of sodium hydroxide.

Several additional commercial businesses were identified in the Polk and Cole historical city directories at the addresses in the study area vicinity. These are listed in Table 5-1.

5.2.3 **Current commercial and industrial activities**

Current industrial and commercial activities at T-117 and the surrounding properties are listed in Table 5-2 and are shown on Figure 2-6.

Table 5-2. Current sites and industrial/commercial activities located adjacent to the T-117 Early Action Area

SITE/ FACILITY NAME	ADDRESS OR APPROXIMATE LOCATION	IDENTIFIED PROCESSES	STORMWATER DISCHARGE POINT (FIGURE 5-9)	POTENTIAL CHEMICALS ASSOCIATED WITH OPERATION
T-117 upland property – International Inspection	8700 Dallas Avenue South (north office bldg at T-117)	non-destructive testing	north outfall at T-117	none identified

SITE/ FACILITY NAME	ADDRESS OR APPROXIMATE LOCATION	IDENTIFIED PROCESSES	STORMWATER DISCHARGE POINT (FIGURE 5-9)	POTENTIAL CHEMICALS ASSOCIATED WITH OPERATION
T-117 upland property – Port Construction Services	8700 Dallas Avenue South (field buildings – center of T-117)	construction material storage and staging	south outfall at T-117	TPH, PAHs and phenols from treated wood storage
T-117 upland property – Basin Oil lease in south building	8700 Dallas Avenue South (west half of south building)	used oil recovery (oil filter draining); oil storage in small containers	south outfall at T-117 (runoff outside building)	Petroleum products
South Park Marina boatyard	8604 Dallas Avenue South	boat washing (closed loop); boat storage, hull refinishing, maintenance	southernmost catch basin in marina (to outfall at seawall); other catch basins unknown	oil and grease, copper (discharge permit monitoring parameters), Metals, TBT
South Park Marina – dry boat storage	corner of 16th Avenue South and Dallas Avenue South	dry boat storage	City of Seattle combined sewer system	oil and grease, copper
Basin Oil	8661 Dallas Avenue South	used oil and oily wastewater processing; oil/water separator, antifreeze storage	south outfall at T-117 (runoff from Dallas Avenue vicinity onto T-117)	petroleum products
Basin Oil – Storage Area	8617 17th Avenue South	empty drum and equipment storage	south outfall at T-117 (normally to catch basins in 17th Avenue, but basins are non-functional)	petroleum products
Boeing – South Park	1420 South Trenton Street	laboratories; flight simulator training.	S. Concord Street storm drain	petroleum products
Seattle Chocolate Company	8620 16th Avenue South	chocolate factory	City of Seattle combined sewer system	none identified

A discussion of activities at each of these properties is presented in the following sections.

5.2.3.1 T-117 upland property – international inspection

International Inspection is located in the office building inside the north entrance to T-117 (formerly the offices of Evergreen Lumber) and is a tenant at the terminal. The company provides nondestructive testing services and their activities appear to be limited to the building interior. This tenant is not considered to be a potential chemical source to any of the media in the study area.

5.2.3.2 T-117 upland property – Port construction services

The Port of Seattle's Construction Services Division maintains an office, storage shed, and outdoor equipment and material storage areas in the central portion of T-117, in the same general area as the former asphalt plant operations. Items observed to be stored in the yard during a field reconnaissance (June 25, 2003) included sandbags, gravel, 5-gal (19-L) containers of asphalt, several small gas cans, plastic pipe, and

treated and untreated lumber. Treated lumber stored outdoors on the asphalt pavement could serve as a minor source of TPH and PAHs in surface water runoff.

5.2.3.3 T-117 upland property – Basin Oil Lease in South Building

Basin Oil Company leases a portion of the large metal building located at the south end of T-117 from the Port of Seattle for additional storage and operating space. During field reconnaissance (June 25, 2003), the Basin Oil operations were observed to be limited to the west half of the building; metal filing cabinets and other office furniture (presumably belonging to the Port) were stored in the east half. According to Basin Oil's consultant (EMR 2000), operations in this building include the warehousing and storage of non-regulated waste received in 55-gal (208-L) drums, and the draining and crushing of used oil filters. These activities were generally confirmed during the field reconnaissance (June 25, 2003). Used oil is collected in a small tank for transfer to the treatment area. While the interior of the building is sheltered and not exposed to storm runoff, any medium or large accidental spills occurring in the interior could potentially flow out to the building exterior. The largest container handled in the building is 55 gal (208 L). Used oils are known to contain PAHs. Although not specifically reported at Basin Oil, recycled and waste oils have also been historically known to occasionally contain low concentrations of PCBs, although the likelihood of this has lessened as the uses of oil containing PCBs have become strictly regulated under TSCA and more recently under RCRA (40 CFR Parts 261 and 279: Hazardous Waste Management System; Identification and Listing of Hazardous Waste; Recycled Used Oil Management Standards). According to Ecology records, Basin Oil routinely checks its oil using Chlor-D-Tect® test kits and uses other means to assure incoming products do not contain PCBs. Any unchecked spills or oil flowing to the exterior of the building could enter the T-117 storm drain catch basins. The 2002 site inspection (Ecology 2003) noted the presence of old underground and above-ground storage tanks, reportedly pulled by Basin Oil, stored in the outdoor area west of the building (at the intersection of Dallas Avenue South and Donovan Street).

5.2.3.4 South Park Marina - main boatyard

South Park Marina located at 8604 Dallas Avenue South has included upland offices, boat repair and cleaning facilities, upland boat storage, boat haul-out services, a boat launching ramp, and moorage slips in the LDW since 1970. According to a drawing included with a discharge permit application, a mobile home park occupied the north half of the present-day marina site in the early 1990s. The Marina operates a closedloop pressure boat wash system near the southeast end of the upland area (Figure 5-5). The wash system is located in the vicinity of a catch basin that flows to a 3,000-gal (11,000-L) oil/water separator. The catch basin is covered with a metal plate when boat washing is conducted. The oil/water separator discharges to the LDW through an outfall near the haulout crane. The marina owner has been sampling and this analyzing discharge for oil and grease, total recoverable copper, and total suspended solids as required under its NPDES permit. Regulated parameters listed in the

discharge monitoring reports for the separator outfall include oil and grease, total recoverable copper, and total suspended solids. None of the discharge monitoring reports obtained from Ecology records indicated exceedances of the monitoring parameters.

There are four or five additional catch basins located throughout the boatyard and it is presently unclear where these basins ultimately discharge (see Section 5.4.2.1). Runoff from boat maintenance areas can potentially contain a number of chemicals, although PCBs would not be expected to be present in the runoff. The marina enforces stormwater Best Management Practices, including the use of vacuum sanders, tarps to catch debris, and routine sweeping of boat maintenance areas. According to the marina owner (Crow 2003), the offices and catch basins are connected to the City of Seattle's combined sewer system, although no records were available from the city to verify this.

According to Ecology (2002), wastes typically generated by boatyard activities (though not necessarily present at the South Park Marina) include spent abrasive grits, spent solvent, spent oils, pressure wash wastewater, paint overspray, paint drips, various cleaners and anti-corrosive compounds, paint chips, scrap metal, welding rods, wood, plastic, resins, glass fibers, and miscellaneous trash such as paper and glass. These wastes may enter the wastewater stream through the application and preparation of paints and the painted surface; handling and storage, and accidental spills of chemicals; leaks or drips of paints, solvents, and thinners; fracturing and breakdown of abrasive grits; and repair and maintenance of mechanical equipment. Hull preparation for painting generally involves sanding, grinding, or scraping, and some abrasive blasting. Boatyards are relatively small generators of spent grits, paint chips, and particulate debris compared to a shipyard.

The primary source of wastewater from boatyards is typically stormwater runoff. Secondary sources are pressure washing, cooling water, pump testing, gray water, sanitary waste, work area washing, and engine bilge water. Engine room bilge water and oily wastes generated at boatyards are typically collected and disposed of through a licensed contracted disposal company.

Pressure wash wastewaters at northwest marinas have been sampled by Ecology, local shipyards and boatyards, and METRO. The effluent quality has been highly variable and frequently exceeds fresh and marine water quality criteria for copper, lead, and zinc. Two prime sources of copper at marinas are leaching of copper from anti-fouling paint, and wastes from hull maintenance. The general boatyard permit prohibits direct discharge of pressure wash wastewaters and calls for closed loop systems (such as that at South Park Marina) or other modes of discharge than to surface waters. At the South Park Marina, the use of stormwater BMPs, the closed-loop wash system, and the ongoing NPDES monitoring provide good source-control mechanisms for potential industrial/commercial discharges to the LDW from upland sources.

5.2.3.5 South Park Marina – boat storage

The property located at the southeast corner of 16th Avenue South and Dallas Avenue South (Figure 2-6) is currently used by South Park Marina for additional dry boat storage. Since activities at this location are limited to storage, there is little potential for chemicals such as those associated with boat washing or maintenance activities to be generated and enter surface water, groundwater, or soil. While some drainage from this location may flow onto Dallas Avenue South and into the study area, most of the runoff likely enters the City of Seattle's catch basins located on 16th Avenue South, which convey stormwater to the city's combined sewerage system.

5.2.3.6 Basin Oil Company and affiliated companies

The triangular assemblage of parcels bounded by 17th Avenue South on the west, Dallas Avenue South on the east, and Donovan Street South on the south are occupied by the industrial operations of Basin Oil and Northwest Antifreeze Service. Basin Tank and Environmental Service also shared the site, but that company closed in January 2002. Tank work is still done under Basin Oil's name. In 1990, EPA inspectors noted that in 1990 the property belonged to Malarkey and was being leased to Frontwater, Inc. Three ASTs with secondary containment were observed on the property during the June 14 site visit (E&E 1990). The tanks were reportedly used to store and separate mixtures of oil and bilge water.

The Basin Oil owner purchased the property in the early 2000s from the previous owners (Ecology 2003). According to Ecology records (Ecology 2003) Basin Oil has been operating at the site since 1987 and has additionally used space at the old Malarkey Asphalt site. Basin Oil Company is a collector, transporter, and marketer of used oil. Used oil is delivered to the facility by Basin Oil tank trucks and transferred to storage tanks prior to treatment. Treatment includes gravity sediment separation and de-emulsification by heating. Following treatment and cooling, the oil is blended for BTU value and transferred into tank trucks for transport to off-site customers. As of 2000, these operations were conducted in an aboveground storage tank farm consisting of approximately 22 tanks with a total capacity of approximately 150,000 gal (570,000 L). At that time, Northwest Antifreeze Service also stored used and new antifreeze in two tanks (Tanks A1 and A2) at the site. Used antifreeze is shipped off-site by Basin Oil tank trucks. When it operated at the site, Basin Tank and Environmental Services removed ASTs, USTs, and residential heating oil tanks.

According to Ecology records (Ecology 2000), stormwater, certain process water, and other liquids from portions of the tank farm area drained to an oil/water separator. A sump pump with a float valve automatically pumped water from the oil/water separator and discharged it out the fence to the west side of Dallas Avenue South. The separated oil layer was skimmed off for processing as used oil. During the 2000 site inspection, Ecology was concerned that the Stormwater Pollution Prevention Plan then in effect for the facility did not adequately address the control of spills into the separator, nor did it document that the separator was adequately sized. Ecology also

noted that the plan did not address maintenance, testing, and monitoring of the separator. Finally Ecology was concerned about activities conducted on the gravel and dirt areas predominately located along the southern portion of the facility. These activities included used UST and AST storage and decommissioning, miscellaneous vehicle and equipment storage, and storage of crushed oil filters. Basin Oil's SPCC Plan (Basin Oil 1995) listed lubricating oil, Bunker C heating oil, diesel fuel, crude oil, jet fuel and gasoline as petroleum-based products routinely handled at the facility. Diagrams of the Basin Oil facility as it existed in the mid-1990s and in 2000 are shown in Figure 5-6 (Basin Oil 1995) and 5-7 (EMR 2000). The earlier figure (1995) includes an inventory of tanks that provide information on the types of material stored at the facility at that time. No corresponding inventory was available for the 2000 diagram. Also, the 2000 diagram shows the south portion of the site, which is not shown in the 1995 diagram.

Potential releases from the Basin Oil vicinity could include oil materials not retained by the oil/water separator, accidental spills outside spill containment areas, and oily drippage from dismantled tanks and equipment. Used oils are generally known to contain PAHs. Although not specifically reported at the Basin Oil facility, recycled and waste oils have been historically known to occasionally contain low concentrations of PCBs, although the likelihood of this has diminished significantly since PCBs have become strictly regulated under TSCA. According to Ecology records, Basin Oil routinely checks its oil using Chlor-D-Tect® test kits and uses additional means to assure incoming products do not contain PCBs. Used antifreeze is generally known to contain certain metals such as lead and cadmium.

5.2.3.7 Basin Oil Storage area at 8617 17th Avenue South

This parcel is used by Basin Oil to store drums. Ecology (2003) noted the presence of drums and trucks stored on the property during the 2002 site inspection. No other information is available on this parcel.

5.2.3.8 Boeing South Park

Relatively little information is available for this facility. Descriptive materials included in an NPDES fact sheet (Ecology 1987) indicated that the location was being used by Boeing for training of commercial aircraft customer flight crews and maintenance personnel. Training was being conducted in classrooms, in-flight simulators, and in aircraft component mockups. The fact sheet also mentioned that various research projects were being conducted in the Radiation Effects Laboratory and in the Electron Laser Facility.

Ecology records indicate that a reportable MTCA release was discovered at the facility in November 1997. According to the report, hydraulic oil was observed leaking from an elevator inside building 15-01. Oil leaked into the elevator jack casing, a boring extending approximately 15 ft (5 m) below the bottom of the elevator pit. According to Boeing (1998), much of the boring was uncased and appeared to be "bored through

bedrock." The release was estimated to be approximately 50 gal (190 L) and measures were implemented to recover oily water from the jack boring. It is unlikely that this release would have any impact on sediment in the nearby LDW. The Boeing South Park facility maintained an NPDES discharge permit (Boeing 1993; Ecology 1993c) for discharge of non-contact cooling water from air conditioning components to the LDW via a storm drain. Specified effluent limitations included flow and temperature. This discharge was discontinued in 1993 and re-routed to the sanitary system.

5.2.3.9 Seattle Chocolate Company

Commercial activities associated with this business are conducted inside the large building located at 8620 16th Avenue South. Although the east portion of the facility drains to 17th Avenue South within the study area, there is no indication that any materials are entering this drainage. There is a small sump structure installed on the concrete apron at the east side of the building. According to City of Seattle records, this sump drains to the combined sanitary sewer system maintained by the city.

Dredged material used as upland fill

With the exception of the shoreline berm crest and rip-rapped face, and portions of the roadways, surface soil in the project area is covered with asphalt pavement, concrete pavement, or buildings. Where soil is exposed, it can contain low chemical concentrations associated with the original source of the fill material. River-derived fill material may contain slightly elevated concentrations of mercury and other contaminants, (Sweet Edwards 1985).

5.2.4 Pathways for chemical migration to sediment

This section discusses pathways through which chemicals could migrate to the LDW. Stormwater discharges likely represent the greatest potential for present-day releases of chemicals from upland areas to water and sediment within the study area (Figure 5-8). Other potential pathways include groundwater discharge to the sediment and direct erosion of shoreline berm materials into the intertidal zone. Each of these pathways is discussed in the following sections.

5.2.4.1 Stormwater drainage

Stormwater is likely to be a significant potential pathway for any upland contaminants originating from accidental releases from the T-117 area to the LDW, from sources that include spilled materials, industrial residues, soil contaminants associated with the suspended particulate load, and dissolved-phase contaminants in runoff from historical or present-day industrial/commercial sources. Known stormwater drainage basins discharging to the study area are shown in Figure 5-9. The southern-most catch basin in the South Park Marina discharges through a permitted oil/water separator to a shoreline outfall as shown. Other catch basins within the marina either discharge to the City of Seattle combined sanitary/stormwater sewer (unlikely) or to one of several

outfalls in the vicinity. The exact discharge points for these catch basins is currently a data gap and will be addressed during the field investigation.

Runoff from the north portions of T-117 flows to catch basin 1, which discharges to the LDW through a 6-in. (15-cm) polyvinyl chloride pipe outfall located within the riprap (Figure 5-9). Runoff from the central interior of the terminal flows to the central catch basin (2). This catch basin discharges through a 3½-in. (9-cm) iron pipe onto the paved area immediately east of the retaining wall and flows overland to nearby catch basin 3. Catch basin 3 discharges through a 6-in. (15-cm) underground pipe to another catch basin (4) serving the south portion of the former "roadway" area. This catch basin discharges to the south catch basin (5). Catch basin 5 also receives runoff from the south portions of T-117, as well as runoff flowing onto the terminal from Dallas Avenue, Basin Oil, the east terminus of Donovan Street, and catch basin 6. The 6-in. (15-cm) diameter outfall for catch basin 5 discharges through the shoreline berm to the outboard riprap. All of the catch basins on T-117 include sumps for retaining settled solids. Catch basin 5 is surrounded with hay bales and is equipped with an insert to retain solids in potentially turbid runoff that flows onto the terminal from Dallas Avenue and Basin Oil.

Drainage from Basin Oil crosses Dallas Avenue South and flows southeast along the east side of Dallas Avenue South and then onto T-117, where it flows to the northwest to catch basin 5. A trench drain 20 ft (6 m) in length is installed at the west doorway of the large metal building at the south end of T-117. This drain, which receives runoff from the east terminus of Donovan Street, discharges through a 6-in. (15-cm) diameter pipe into nearby catch basin 6 near the west corner of the building. The discharge culvert for this catch basin runs along the north side of the building and discharges to the paved driveway area (Figure 5-9). The runoff then flows overland to catch basin 5 and then to the LDW.

Stormwater from the west side of the Basin Oil Plant and the vicinity of 17th Avenue South historically drained to one of two catch basins located at the west side of 17th Avenue (Figure 5-9). Based on location and design, it is believed that these basins are City of Seattle catch basins and, when operative, likely discharged to the same combined storm/sanitary system serving the catch basins located further west (Figure 5-10), although no connections are shown in the city's utility drawings. These catch basins were observed to be completely filled with soil and inoperative (field reconnaissance, June 11, 2003). Without proper drainage, stormwater pools in 17th Avenue South and, under heavy rainfall conditions, begins to discharge around the north end of the Basin Oil plant onto Dallas Avenue South. This condition has been observed in the vicinity for at least the past 10 years. Eventually, this runoff combines with the other overland flows to catch basin 5. The pavement on 17th Avenue and the southern portion of Dallas Avenue South has not been maintained, contributing to the high suspended solids in the runoff from these areas.

Drainage patterns around the Boeing South Park plant have not been identified. However, the City of Seattle Drainage Map (Figure 5-11) shows an 8-in. (20-cm) storm drain in the vicinity of South Concord Street that corresponds to the concrete outfall observed at the shoreline in this vicinity. This is likely the drain that received noncontact cooling water from the Boeing South Park Plant under an NPDES permit until 1993 when it was discontinued (Boeing 1993).

Runoff from properties located further west of the study area drains to one of several catch basins located in the vicinity of 16th Avenue South, or avenues further west. These storm drains are served by the City of Seattle's combined storm/sanitary sewer system (Figure 5-10). The pavement on these thoroughfares is in better condition than on 17th and Dallas Avenues and helps control the amount of soil and debris entering these structures.

Other drainage features include a rectangular catch basin located near the southwest corner of the intersection of 17th Avenue and Donovan Street. This catch basin does not appear to receive a large amount of runoff, and is dissimilar in design to the cityowned catch basins in the vicinity. A discharge pipe can be observed exiting the basin and leading off toward the west. The eventual discharge point is suspected to be the drainage ditch located between the south end of T-117 and the Boeing property Figure 5-9), although this location needs to be verified during the field program. This drainage ditch also receives runoff from the south slope of the metal building roof (south side of T-117) and discharges over the bank at the location shown in Figure 5-9. Because this drainage ditch is not paved and appears to contain asphalt plant-era residues, it may also serve as a source of eroded contaminants to the river system. The exact location of the property boundary between the Port of Seattle and Boeing relative to the ditch alignment needs to be verified as part of the planning process for further assessment of the upland conditions.

Historical drainage patterns were modified slightly in the T-117 area during the Port of Seattle's soil removal action in the fall of 1999. Prior to that time, a large elongated depression or "pond" was located in the east parcel (just inland of the shoreline berm) between the present-day locations of catch basins 3 and 5. Catch basins 3 and 4 (installed in 1999) did not exist and catch basin 5 was filled with sediment and inoperative. Water flowing from the upland areas during storm events filled the depression until it overflowed the shoreline berm at the location shown on Figure 5-9. Under intense storm conditions, impounded water also over flowed the berm in the vicinity of catch basin 5. Catch basin 2 originally discharged into the infiltration trench system identified and removed during the PCB soil removal/containment action (Figure 5-12; Onsite 2000b).

5.2.4.2 Groundwater

The net discharge of shallow groundwater beneath the study area is toward the shore of the LDW. Several active groundwater seeps (Figures 5-5 and 5-9) are present at the base of the shoreline berm and flow out onto the intertidal mudflat. Because much of

the shallow aquifer adjacent to the LDW is tidally influenced, some of this discharge is water that infiltrated the shoreline interface during the preceding high tide. Seeps may also be remnant discharge features associated with the filled oxbow located near the site (Figure 2-2). If hydraulically transmissive fill materials were used in the oxbow, it might cause additional groundwater storage and flux across the shoreline interface. If subsequent sampling of seep water indicates the presence of chemicals of concern, then the upland study area may need to be enlarged to include potential contributors of groundwater contamination near the former oxbow.

5.2.4.3 Shoreline berm and unpaved uplands erosion

Together with stormwater drainage, direct erosion of wastes and contaminated soil in the shoreline berm intertidal area and unpaved drainages is a significant potential pathway for contaminants reaching river sediment. Waste materials from Malarkey Asphalt plant operations are present in the outboard riprap of the shoreline berm, on the vegetated berm crest and in the drainage ditch at the south side of T-117. These materials include excess hardened asphalt and asphalt roofing materials. Weathered chunks of asphalt can also be found on the tidal mudflat offshore of the berm. As these materials continue to weather, they become incorporated into the sediment matrix and likely contribute to the concentration of detected chemicals. Small sheens 1-2 in. (2-5 cm) in diameter can also be observed on the mudflats directly offshore of hardened asphalt masses in the river bank, further indication that these materials are decomposing and serve as a potential source of chemicals in river sediment. Finally, it is suspected that chemicals in upland surface soil (predominately PCBs) may have become deposited in sediment over the years by stormwater at select locations on the vegetated crest and outboard face of the berm, particularly in the vicinity of catch basin outfalls or where runoff historically overflowed the berm. These soils could gradually erode and become incorporated into the adjacent LDW sediment.

6.0 Data Needs

This section presents the information needed to fill data gaps identified in the review of existing information. The section is organized by data type. Section 6.1 presents the environmental data needs to complete the characterization of the site. Section 6.2 presents a preliminary identification of engineering data needs. Section 6.3 presents the data needs to complete the source identification. Table 6-1 presents a summary of the data types, data needs, and a recommendation of filling the data need. Figure 6-1 displays potential sources and identifies PCB sediment chemistry results, which may be useful in determining data gaps.

Table 6-1. Potential data needs for T-117

DATA TYPES	DATA COLLECTION PROPOSED?	RATIONALE FOR RECOMMENDATION
Surface sediment chemistry data	yes	Additional surface sediment chemistry data are needed to further characterize the nature and extent of chemical distributions
Subsurface sediment chemistry data	yes	Additional subsurface sediment chemistry data are needed to further characterize the nature and extent of chemical distributions
Groundwater chemistry data	yes	Additional groundwater monitoring wells will be installed at 2 soil boring locations and 2 existing monitoring wells will be sampled at a tide < MLLW to determine the potential of groundwater to re-contaminate sediments offshore of T-117. Tide cycle monitoring will also be done on all 4 wells
Seep chemistry data	yes	Samples will be collected to determine the potential for existing seeps to re-contaminate sediments offshore of T-117
Habitat characterization	no	Data on water depth and location of intertidal areas will be collected as part of the LDW RI/FS bathymetry survey in 2003
Soil borings	yes	Data covering the soil technical characteristics and chemical quality of soils along the shoreline and unpaved area are needed to adequately define any source control requirements and constructability
Surface and Subsurface sediment geotechnical data	yes	Data on sediment type and strength are needed to evaluate remedial alternatives
Catch basin sediment samples	yes	Data on the type and quality of catch basin sediments are required to evaluate storm drains as a potential recontamination source to sediments offshore of T-117
Drainage ditch soil - South	yes	Data on the quality of drainage ditch soil and intertidal sediment below ditch to evaluate ditch soil as a potential recontamination source to sediments offshore of T-117
Shoreline berm soil in vicinity of historical upland overflows	yes	Data on quality of berm face soil in the vicinity of former stormwater overflow points to evaluate berm soil as a potential recontamination source to sediments offshore of T-117
Fate and transport of sediments	no	Data will be collected as part of the LDW RI/FS in 2004.It is uncertain if the data from the RI will be useful to T-117 and will be re-evaluated at a later time
Bioavailability/ toxicity testing	maybe	Toxicity tests and other methods of determining bioavailability may be performed based on the results of the sediment chemical analysis

6.1 ENVIRONMENTAL

The environmental data needs include surface and subsurface sediment chemistry to determine the nature and extent of contamination in the T-117 EAA. Sediment sample locations will be identified based on a review of the existing data. An initial review of the data suggest that a sample design utilizing a number of transects will fill data gaps associated with both surface and subsurface sediment. The specific sample locations, analyte groups, and number of samples will be included in the QAPP. Sediment

toxicity tests and other methods of determining bioavailability may be performed based on the results of the sediment chemical analysis.

6.2 **ENGINEERING DESIGN**

The engineering data needs include soil borings and offshore coring to determine the vertical extent of PCB impacted soil along the shoreline for source control evaluation and establish general engineering characteristics of the shoreline soil for constructability of various remedial actions. Additional details will be included in the QAPP.

This section describes general types of cleanup actions that may be used to assist in the engineering evaluation of the remedial alternatives at a later date. The remedial alternatives currently under consideration are:

- ◆ **Shoreline Excavation**—The purpose of shoreline excavation would be to remove source materials that could erode into a waterway and contaminate the sediment. Shoreline excavation alternatives could range from removal of isolated pockets of contaminated material to removal of extended lengths of the shoreline by pulling the top of the slope back, resulting in areas of flatter shoreline slope.
- **Shoreline Capping**—The purpose of shoreline capping would be to contain soil particles with elevated chemical concentrations so they are not eroded into a waterway. Shoreline capping would be designed to provide the needed isolation characteristics to contain the soil particles with elevated chemical concentrations, and to be resistant to shoreline erosion.
- **Sediment Dredging**—The purpose of sediment dredging would be to remove surface sediment that are above cleanup criteria from the aquatic portion of the site, and/or to remove subsurface sediment that could erode and impact surface sediment quality in a waterway.
- **Sediment Capping**—The purpose of sediment capping would be to contain sediment particles with elevated chemical concentrations to isolate them from marine organisms, and to prevent future erosion of the sediment. Capping would be designed to provide the needed isolation characteristics to contain sediment particles with elevated chemical concentrations, and to be resistant to aquatic erosion.

6.3 Source Identification

The following source identification data needs have been identified:

Discharge points for the four catch basins observed at South Park Marina (Figure 5-5). The discharge point for the fifth (southeast) catch basin is documented in the facility's NPDES permit for the oil/water separator (Ecology 1993a). Discharge points should be determined by the relevant property owner

- or appropriate government agency through direct inspection of the catch basins and piping, flow observations, and, if necessary, dye testing.
- The surveyed location and elevation of stormwater outfalls from T-117 catch basins 1 and 5 to the LDW. Outfalls were recently located by the City of Seattle Public Utility surveyors and will be surveyed in the near future. Flow from catch basin 1 versus potential surrounding seeps may be delineated.
- Quality of sediment contained in drainage area catch basins. Sediment from the six catch basins located on T-117 and the catch basins at South Park Marina that discharge to the LDW should be sampled and analyzed for selected chemicals of interest.
- Quality of seeps observed at the base of the riprap shoreline at the center of the T-117 shoreline and (if located within the study area) southeast of the South Park Marina boat ramp. Water from these seeps should be sampled and analyzed for selected chemicals of interest and conventional field parameters.
- Specific locations and estimated quantities of waste materials (solidified asphalt and asphaltic roofing materials) located within the shoreline riprap and in the drainage ditch at the south side of T-117 (between the terminal and the Boeing South Park property).
- Presence and size of any buried or partially buried asphalt masses located within the sediment of the intertidal mudflats.
- Quality of soil on the shoreline berm surface, including the heavily vegetated crest of the berm, in the vicinity of catch basin outfalls and historical upland overflow points. Surface soil in the berm face should be sampled and analyzed for selected chemicals of interest.
- Quality of groundwater in the shoreline berm. Monitoring wells will be installed in upland soil boring locations and analyzed for selected chemicals of interest. Existing shoreline berm monitoring wells will also be analyzed. All wells will be sampled when the tide is below MLLW to ensure that LDW water does not dilute the groundwater sample. Tide cycle monitoring will also be performed on all sampled wells.

The details of methods that will be used to identify sources to the T-117 EAA will be discussed in the QAPP.

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APPENDIX A: CHEMISTRY RESULTS FROM CURRENT SURFACE SEDIMENT

Event	Region	Location Number	SedQual Sample ID	Sample ID	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Metals Aluminum	16600	mg/kg			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Aluminum	28000	mg/kg			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Aluminum	21700	mg/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Aluminum	24600	mg/kg			
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Aluminum	22400	mg/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Aluminum	22400	mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Aluminum	14500	mg/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Aluminum	26600	mg/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Aluminum	15300	mg/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Aluminum	15500	mg/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Antimony	10	mg/kg	U		
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Antimony	10	mg/kg	J		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Antimony	10	mg/kg	UJ		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Antimony	10	mg/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Antimony	10	mg/kg	UJ		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Antimony	10	mg/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Antimony	10	mg/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Antimony	10	mg/kg	UJ		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Antimony	6.0	mg/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Antimony	10	mg/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Arsenic	7.1	mg/kg			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Arsenic	10	mg/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Arsenic	12	mg/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Arsenic	9.6	mg/kg			
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Arsenic	7.9	mg/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Arsenic	9.8	mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Arsenic	15	mg/kg			
Boeing	Nearshore south	894	SD0018	SD0018	Arsenic	12	mg/kg			
Boeing	Nearshore south	895	SD0019	SD0019	Arsenic	14	mg/kg			
Boeing	Nearshore south	897	SD0012	SD0012	Arsenic	12	mg/kg			
Boeing	Nearshore south	898	SD0009	SD0009	Arsenic	11	mg/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Arsenic	7.4	mg/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Arsenic	16	mg/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Arsenic	9.6	mg/kg			
Boeing	T-117 EAA	892	SD0011	SD0011	Arsenic	12	mg/kg			
Boeing	T-117 EAA	893	SD0010	SD0010	Arsenic	11	mg/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Barium	52	mg/kg			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Barium	82	mg/kg			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Barium	75	mg/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Barium	84	mg/kg			
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Barium	70	mg/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Barium	72	mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Barium	47	mg/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Barium	75	mg/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Barium	52	mg/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Barium	41	mg/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Cadmium	0.40	mg/kg			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Cadmium	0.40	mg/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Cadmium	0.30	mg/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Cadmium	0.26	mg/kg			
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Cadmium	0.21	mg/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Cadmium	0.20	mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Cadmium	0.14	mg/kg			
Boeing	Nearshore south	894	SD0018	SD0018	Cadmium	0.40	mg/kg	UJ		
Boeing	Nearshore south	895	SD0019	SD0019	Cadmium	0.40	mg/kg	UJ		
Boeing	Nearshore south	897	SD0012	SD0012	Cadmium	0.40	mg/kg	UJ		
Boeing	Nearshore south	898	SD0009	SD0009	Cadmium	0.40	mg/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Cadmium	0.40	mg/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Cadmium	0.20	mg/kg			·
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Cadmium	0.20	mg/kg			
Boeing	T-117 EAA	892	SD0011	SD0011	Cadmium	0.40	mg/kg	UJ		
Boeing	T-117 EAA	893	SD0010	SD0010	Cadmium	0.40	mg/kg	UJ		·
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Chromium	20	mg/kg			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Chromium	33	mg/kg	J		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Chromium	26	mg/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Chromium	30	mg/kg			
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Chromium	27	mg/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Chromium	14	mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Chromium	20	mg/kg			
Boeing	Nearshore south	894	SD0018	SD0018	Chromium	21	mg/kg	J		
Boeing	Nearshore south	895	SD0019	SD0019	Chromium	28	mg/kg	J		
Boeing	Nearshore south	897	SD0012	SD0012	Chromium	22	mg/kg	J		
Boeing	Nearshore south	898	SD0009	SD0009	Chromium	28	mg/kg	J		



		Location	SedQual				Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	OC	OC dw
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Chromium	34	mg/kg			
EPA SI EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Chromium	26 22	mg/kg			
Boeing	T-117 EAA T-117 EAA	774 892	DR208-0000 SD0011	SD-DR208-0000 SD0011	Chromium Chromium	26	mg/kg mg/kg	J		
Boeing	T-117 EAA	893	SD0011	SD0011	Chromium	27	mg/kg	J		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Cobalt	8.0	mg/kg	J		
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Cobalt	11	mg/kg			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Cobalt	10	mg/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Cobalt	11	mg/kg			
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Cobalt	9.0	mg/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Cobalt	6.0	mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Cobalt	7.0	mg/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Cobalt	11	mg/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Cobalt	8.0	mg/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Cobalt	7.0	mg/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Copper	36	mg/kg			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Copper	51	mg/kg	J		
EPA SI	Navigation T-117 Nearshore north	784 771	DR218-0000 DR205-0000	SD-DR218-0000 SD-DR205-0000	Copper	49 40	mg/kg mg/kg			
EPA SI	Nearshore north	793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Copper Copper	37	mg/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Copper	26	mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Copper	31	mg/kg			
Boeing	Nearshore south	894	SD0018	SD0018	Copper	32	mg/kg			
Boeing	Nearshore south	895	SD0019	SD0019	Copper	41	mg/kg			
Boeing	Nearshore south	897	SD0012	SD0012	Copper	32	mg/kg			
Boeing	Nearshore south	898	SD0009	SD0009	Copper	44	mg/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Copper	46	mg/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Copper	42	mg/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Copper	32	mg/kg			
Boeing	T-117 EAA	892	SD0011	SD0011	Copper	37	mg/kg			
Boeing	T-117 EAA	893	SD0010	SD0010	Copper	44	mg/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Dibutyltin as ion	10	ug/kg	UJ		
EPA SI EPA SI	Nearshore south	776	DR210-0000 DR206-0000	SD-DR210-0000	Dibutyltin as ion	5.0 5.0	ug/kg	UJ		
EPA SI	T-117 EAA T-117 EAA	772 774	DR208-0000	SD-DR206-0000 SD-DR208-0000	Dibutyltin as ion Dibutyltin as ion	9.0	ug/kg	J		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Iron	22000	ug/kg mg/kg	J		
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Iron	32000	mg/kg	J		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Iron	29600	mg/kg	J		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Iron	31500	mg/kg	J		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Iron	28300	mg/kg	J		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Iron	23900	mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Iron	28000	mg/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Iron	32300	mg/kg	J		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Iron	26700	mg/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Iron	24000	mg/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Lead	16	mg/kg			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Lead	35	mg/kg			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Lead	18	mg/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Lead	15	mg/kg			
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Lead	13	mg/kg			
EPA SI EPA SI	Nearshore south Nearshore south	775 776	DR209-0000 DR210-0000	SD-DR209-0000 SD-DR210-0000	Lead Lead	13 18	mg/kg mg/kg			
Boeing	Nearshore south	894	SD0018	SD0018	Lead	21	mg/kg			
Boeing	Nearshore south	895	SD0019	SD0019	Lead	18	mg/kg			
Boeing	Nearshore south	897	SD0012	SD0012	Lead	17	mg/kg			
Boeing	Nearshore south	898	SD0009	SD0009	Lead	21	mg/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Lead	17	mg/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Lead	46	mg/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Lead	26	mg/kg			
Boeing	T-117 EAA	892	SD0011	SD0011	Lead	19	mg/kg			
Boeing	T-117 EAA	893	SD0010	SD0010	Lead	21	mg/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Manganese	233	mg/kg			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Manganese	350	mg/kg			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Manganese	314	mg/kg			
EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Manganese Manganese	349 308	mg/kg			
EPA SI	Nearshore south	793	DR227-0000 DR209-0000	SD-DR227-0000 SD-DR209-0000	Manganese	533	mg/kg mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR209-0000 SD-DR210-0000	Manganese	392	mg/kg			-
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Manganese	317	mg/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Manganese	411	mg/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Manganese	327	mg/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Mercury	0.10	mg/kg			
		497	DUW82-0000	SD2B-DUW82-0000	Mercury	0.13	mg/kg			
Plant 2 RFI-2b	Navigation T-117	431	D0 1102 0000	3D2D-D0 W02-0000	Wichouty	0.10				



Execution Region Number Semple ID Semple ID Parameter Value Gr G			Location	SedQual				Unit		Value	Unit
EPA SI Nearshore north	Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	OC	OC dw
EPA SI Nearshore south 776 De229-0000 SPD-P221-0000 Mercury 0.44 mg/kg Boeing Nearshore south 844 S00018 SD-P221-0000 Mercury 0.98 mg/kg Boeing Nearshore south 849 S00018 SD0018 Mercury 0.12 mg/kg Boeing Nearshore south 849 S00018 SD0018 Mercury 0.17 mg/kg Boeing Nearshore south 840 S00018 SD0018 Mercury 0.17 mg/kg Boeing Nearshore south 840 S00018 SD0019 SD0019 Mercury 0.17 mg/kg Boeing Nearshore south 840 S00019 SD0019 Mercury 0.17 mg/kg Boeing Nearshore south 840 S00019 SD0019 Mercury 0.17 mg/kg Boeing Nearshore south 840 S00019 SD0019 Mercury 0.17 mg/kg Boeing Nearshore south 771 De220-0000 SD0029 Mercury 0.10 mg/kg Boeing Nearshore south 772 De220-0000 SD0029-0000 Mercury 0.07 mg/kg Boeing Nearshore south 772 De220-0000 SD0029-0000 Mercury 0.07 mg/kg Boeing Nearshore south 770 De220-0000 SD0029-0000 Mercury 0.07 mg/kg Boeing Nearshore south 770 De220-0000 SD0029-0000 Mercury 0.09 mg/kg BPA SI Navigation north 800 De224-0000 SD0029-0000 Mercury 0.10 mg/kg BPA SI Navigation north 800 De224-0000 SD0029-0000 Mercury 0.10 mg/kg BPA SI Navigation north 800 De224-0000 SD0029-0000 Mercury 0.10 mg/kg BPA SI Navigation north 800 De224-0000 SD0029-0000 SD0029-0000 Mercury 0.10 mg/kg BPA SI Navigation north 800 De224-0000 SD0029-0000 SD0029-0000 Sb0029-0000 Sb002											
EPA SI Nearhbors south 776 DR210-0000 SPA210-0000 Mercury 0.48 mg/kg Boening Nearhbors south 884 SD0018 Mercury 0.12 mg/kg Boening Nearhbors south 885 SD0019 SD0012 Mercury 0.17 mg/kg Boening Nearhbors south 885 SD0020 SD0020 Nearhors 0.10 mg/kg Boening Nearhbors south 883 SD0020 SD0020 Nearhors 0.10 mg/kg EPA SI T1-17 EAA ST0-17 RECEDIO Nearhors 0.00 Nearhors EPA SI Natification Nearhors						•			J		
Boering Neashbore south						•			-		
Seeing Nearshore south 897 S00012 S00012 Mercury 0.17 mg/kg	Boeing	Nearshore south				Mercury	0.08		U		
Seeing	-					•					
EPA SI T-17 EAA 772 DR206-0000 Sb-DR206-0000 Mercury 0.10 mg/kg EPA SI T-17 EAA 774 DR209-0000 Sb-DR207-0000 Mercury 0.07 mg/kg EPA SI T-17 EAA 882 SD011 SD011 Mercury 0.09 mg/kg Boeing T-17 EAA 883 SD0011 SD0011 Mercury 0.10 mg/kg EPA SI Navagiation north 800 DR234-0000 Sb-DR240-0000 n-Butylitin 1.0 mg/kg U.J EPA SI T-17 EAA 870 DR200-0000 Sb-DR210-0000 n-Butylitin 5.0 up/kg U.J EPA SI T-17 EAA 772 DR200-0000 Sb-DR210-0000 n-Butylitin 6.0 up/kg U.J EPA SI Navagiation T-17 Tr 772 DR200-0000 Sb-DR210-0000 n-Butylitin 6.0 up/kg U.J EPA SI Navagiation T-17 Tr 772 DR200-0000 Sb-DR210-0000 Neckel 12						•					
EPA SI T-17 EAA 774 DR269-0000 SB-DR267-0000 Mercury 0.07 mg/kg Boeing T-17 EAA 892 SD0011 SD0011 Mercury 0.09 mg/kg Boeing T-17 EAA 893 SD0010 SD0011 Mercury 0.09 mg/kg EPA SI Namathore south 76 DR210-0000 Sb-DR224-0000 n-Bufylinn 1.0 ug/kg J EPA SI T-17 EAA 772 DR200-0000 Sb-DR224-0000 n-Bufylinn 1.0 ug/kg J EPA SI T-17 EAA 772 DR200-0000 Sb-DR226-0000 n-Bufylinn 3.5 ug/kg J EPA SI T-17 EAA 772 DR200-0000 Sb-DR226-0000 n-Bufylinn 6.0 ug/kg J EPA SI Namathor sooth 300 DR224-0000 Sb-DR226-0000 N-Bufylinn 6.0 mg/kg J EPA SI Namathor sooth 300 DR224-0000 Sb-DR226-0000 N-Bufylinn 6.0						•					
EPA SI						,					
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Beeng											
EPA SI Nearshore south 776 DR210-0000 SD-DR210-0000 n-Butylin 5.0 upkg J EPA SI T-117 EAA 774 DR208-0000 SD-DR208-0000 n-Butylin 35 upkg J EPA SI Navagation 74 DR208-0000 SD-DR208-0000 n-Butylin 6.0 upkg J EPA SI Navagation 717 497 DUW82-0000 Nokele 16 mgkg J EPA SI Navagation 717 749 DR218-0000 SD-DR208-0000 Nickel 26 mgkg EPA SI Navagation 717 749 DR218-0000 SD-DR208-0000 Nickel 21 mgkg EPA SI Nearshore south 75 DR209-0000 SD-DR208-0000 Nickel 21 mgkg EPA SI Nearshore south 775 DR209-0000 SD-DR208-0000 Nickel 19 mgkg Boeing Asserthore south 75 DR206-0000 SD-DR208-0000 Nickel		T-117 EAA	893	SD0010	SD0010	Mercury	0.10				
EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 n-Butylin 6.0 upkg JU EPA SI Navogation north 800 DR224-0000 SD-DR208-0000 N-Butylin 6.0 upkg JU PEA SI Navogation north 800 DR224-0000 SD-DR224-0000 Nokele 16 mgkg EPA SI Navogation 7-117 784 DR248-0000 SD-DR248-0000 Nokele 21 mgkg EPA SI Navogation 7-117 784 DR248-0000 SD-DR227-0000 Nokele 21 mgkg EPA SI Nearshore north 773 DR2267-0000 SD-DR227-0000 Nokele 9.1 mgkg EPA SI Nearshore south 776 DR210-0000 SD-DR210-0000 Nokele 9.1 mgkg EPA SI Nearshore south 894 SD018 Nokele 15 mgkg Boeing Nearshore south 897 SD012 Nokele 12 mgkg Boeing Nearshore south 898 SD00		Navigation north						ug/kg			
EPA SI T-117 EBAA 774 DR208-00000 ISD-0824-00000 In-Butylinh 6.0 ug/lag J EPA SI Navigation T-117 497 DUW82-0000 SD28-DUW82-0000 Nickel 26 mg/kg EPA SI Navigation T-117 784 DR218-0000 SD28-DUW82-0000 Nickel 26 mg/kg EPA SI Nearshore north 771 DR208-0000 SD-08-0000 Nickel 21 mg/kg EPA SI Nearshore south 775 DR209-0000 SD-08-0000 Nickel 21 mg/kg EPA SI Nearshore south 776 DR209-0000 SD-08-0000 Nickel 9.1 mg/kg EPA SI Nearshore south 895 SD0018 SD0018 Nickel 17 mg/kg Boeing Nearshore south 895 SD0019 SD0019 Nickel 18 mg/kg Boeing Nearshore south 898 SD0019 SD0012 Nickel 18 mg/kg Boeing Near											
EPA SI Navigation north 800 DR234-0000 SD-DR234-0000 Nickel 16 mg/kg PPA SI Navigation T-117 497 DWR2-0000 SD-DR218-0000 Nickel 21 mg/kg EPA SI Navigation T-117 744 DR218-0000 SD-DR218-0000 Nickel 21 mg/kg EPA SI Nearshore north 733 DR227-0000 SD-DR227-0000 Nickel 20 mg/kg EPA SI Nearshore south 776 DR210-0000 SD-DR227-0000 Nickel 19 1 mg/kg EPA SI Nearshore south 786 DR210-0000 SD-DR221-0000 Nickel 15 mg/kg Boeing Nearshore south 895 SD0019 SD0018 Nickel 25 mg/kg Boeing Nearshore south 897 SD0012 Nickel 25 mg/kg Boeing Nearshore south 898 SD0019 Nickel 24 mg/kg EPA SI T-117 EAA 772 DR2											
Pient 2 RF-2b Navigation T-117									J		
EPA SI Navigation T-117 744 DR28-90000 SD-DR28-90000 Nickel 21 mg/kg EPA SI Nearshore north 731 DR26-90000 SD-DR26-90000 Nickel 20 mg/kg EPA SI Nearshore south 775 DR209-0000 SD-DR20-9000 Nickel 20 mg/kg EPA SI Nearshore south 776 DR210-0000 SD-DR20-9000 Nickel 15 mg/kg Boeing Nearshore south 895 SD0019 SD0019 Nickel 17 mg/kg Boeing Nearshore south 895 SD0019 SD0019 Nickel 18 mg/kg Boeing Nearshore south 895 SD0012 SD0019 Nickel 18 mg/kg EPA SI T-117 EAA 772 DR260-0000 SD-DR20-0000 Nickel 18 mg/kg EPA SI T-117 EAA 773 DR200-0000 SD-DR20-0000 Nickel 18 mg/kg EPA SI T-117 EAA 892											
EPA SI Nearshore north 771 DR205-0000 SD-R207-0000 Nickel 21 mg/kg EPA SI Nearshore south 775 DR207-0000 SD-R207-0000 Nickel 9.1 mg/kg EPA SI Nearshore south 775 DR207-0000 SD-R207-0000 Nickel 9.1 mg/kg Boeing Nearshore south 894 SD0018 SD0018 Nickel 177 mg/kg Boeing Nearshore south 895 SD0019 Nickel 12 mg/kg Boeing Nearshore south 897 SD0012 Nickel 18 mg/kg Boeing Nearshore south 898 SD0009 SD0012 Nickel 25 mg/kg EPA SI 7-117 EAA 772 DR200-0000 SD-DR200-0000 Nickel 24 mg/kg EPA SI 7-117 EAA 773 DR207-0000 SD-DR200-0000 Nickel 18 mg/kg EPA SI Navijasion north 800 DR207-0000 Nickel		_									
EPA SI Nearshore south 775 DR209-0000 SD-R209-0000 Nickel 9.1 mg/kg EPA SI Nearshore south 894 SD0018 SD0018 Nickel 17 mg/kg Boeing Nearshore south 895 SD0019 SD0019 Nickel 17 mg/kg Boeing Nearshore south 897 SD0012 SD0012 Nickel 18 mg/kg Boeing Nearshore south 897 SD0012 Nickel 18 mg/kg Boeing Nearshore south 897 SD0012 Nickel 28 mg/kg Boeing T-117 AA 772 DR206-0000 SD0010 Nickel 24 mg/kg EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Nickel 18 mg/kg EPA SI T-117 EAA 892 SD0011 Nickel 18 mg/kg Boeing T-117 EAA 893 SD0010 Nickel 24 mg/kg		•									
EPA SI Nearshore south	EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Nickel	20	mg/kg			
Boeing Nearshore south 894 SD0018 SD0018 Nickel 17 mg/kg											
Boeing Nearshore south 895 SD0019 SD0019 Nickel 25 mg/kg											
Boeing	-										
Boeing											
EPA SI	-										
EPA SI											
Boeing T-117 EAA 892 SD0011 SD0011 Nickel 24 mg/kg											
Boeling	EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Nickel	16	mg/kg			
EPA SI											
Plant 2 RFI-2b Navigation T-117											
EPA SI Navigation T-117 784 DR218-0000 SD-DR216-0000 Silver 0.26 mg/kg EPA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Silver 0.16 mg/kg EPA SI Nearshore south 775 DR209-0000 SD-DR207-0000 Silver 0.29 mg/kg EPA SI Nearshore south 775 DR209-0000 SIlver 0.29 mg/kg Boeing Nearshore south 894 SD0018 SIlver 0.40 mg/kg U Boeing Nearshore south 895 SD0019 SD0019 Silver 0.40 mg/kg U Boeing Nearshore south 897 SD0012 SD0012 Silver 0.40 mg/kg U Boeing Nearshore south 898 SD0009 SIlver 0.40 mg/kg U Boeing 1-117 EAA 772 DR206-0000 SD-DR206-0000 Silver 0.15 mg/kg U EPA SI 1-117 E		-									
EPA SI Nearshore north 771 DR205-0000 SD-DR227-0000 Silver 0.16 mg/kg EPA SI Nearshore south 775 DR209-0000 SD-DR227-0000 Silver 0.29 mg/kg EPA SI Nearshore south 776 DR209-0000 SD-DR209-0000 Silver 0.29 mg/kg Boeing Nearshore south 894 SD0018 Silver 0.40 mg/kg U Boeing Nearshore south 895 SD0019 SD0019 Silver 0.40 mg/kg U Boeing Nearshore south 897 SD0012 SD0019 Silver 0.40 mg/kg U Boeing Nearshore south 898 SD0009 SD0009 Silver 0.40 mg/kg U EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Silver 0.15 mg/kg EPA SI T-117 EAA 774 DR206-0000 SD-DR206-0000 Silver 0.16 mg/kg U											
EPA SI Nearshore north 793 DR227-0000 SD-DR227-0000 Silver 0.13 mg/kg EPA SI Nearshore south 775 DR209-0000 Silver 0.29 mg/kg EPA SI Nearshore south 776 DR210-0000 Silver 0.15 mg/kg Boeing Nearshore south 894 SD0018 SD0018 Silver 0.40 mg/kg U Boeing Nearshore south 895 SD0019 SIlver 0.40 mg/kg U Boeing Nearshore south 897 SD0012 SIlver 0.40 mg/kg U Boeing Nearshore south 898 SD0009 SIlver 0.40 mg/kg U Boeing T-117 EAA 772 DR206-0000 SD-DR207-0000 Silver 0.15 mg/kg U EPA SI T-117 EAA 773 DR207-0000 SD-DR208-0000 Silver 0.16 mg/kg U Boeing T-117 EAA 774 DR		•									
EPA SI Nearshore south 775 DR209-0000 SD-DR209-0000 Silver 0.29 mg/kg EPA SI Nearshore south 776 DR210-0000 SD-DR210-0000 Silver 0.15 mg/kg U Boeing Nearshore south 894 SD0018 SD0019 Silver 0.40 mg/kg U Boeing Nearshore south 895 SD0012 SD0012 Silver 0.40 mg/kg U Boeing Nearshore south 898 SD0009 SD0009 Silver 0.40 mg/kg U Boeing Nearshore south 898 SD0009 SD0009 Silver 0.40 mg/kg U EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Silver 0.15 mg/kg EPA SI T-117 EAA 774 DR208-0000 SD-DR208-0000 Silver 0.16 mg/kg Boeing T-117 EAA 892 SD0011 SD0010 Silver 0.40 mg/kg											
Boeing Nearshore south 894 SD0018 SD0019 Silver 0.40 mg/kg U											
Boeing Nearshore south 895 SD0019 SD0019 Silver 0.40 mg/kg U											
Boeing Nearshore south 897 SD0012 SD0012 Silver 0.40 mg/kg U											
Boeing Nearshore south 898 SD0009 SD0009 Silver 0.40 mg/kg U	-										
EPA SI T-117 EAA 772 DR206-0000 SD-DR207-0000 Silver 0.19 mg/kg EPA SI T-117 EAA 773 DR207-0000 SD-DR207-0000 Silver 0.15 mg/kg EPA SI T-117 EAA 774 DR208-0000 SD-DR208-0000 Silver 0.16 mg/kg Boeing T-117 EAA 892 SD0011 SD0011 Silver 0.40 mg/kg U Boeing T-117 EAA 893 SD0010 SD0010 Silver 0.40 mg/kg U EPA SI Navigation north 800 DR234-0000 SD-DR210-0000 Tetrabutyltin as ion 5.0 ug/kg UJ EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Tetrabutyltin as ion 5.0 ug/kg UJ EPA SI T-117 EAA 774 DR206-0000 SD-DR208-0000 Tetrabutyltin as ion 5.0 ug/kg UJ EPA SI T-117 EAA 774 DR206-0000 SD-DR208-0000 Tetrabutyltin as i											
EPA SI T-117 EAA 773 DR207-0000 SD-DR207-0000 Silver 0.15 mg/kg EPA SI T-117 EAA 774 DR208-0000 SD-DR208-0000 Silver 0.16 mg/kg Boeing T-117 EAA 892 SD0011 SD0011 Silver 0.40 mg/kg U Boeing T-117 EAA 893 SD0010 SD0011 Silver 0.40 mg/kg U EPA SI Navigation north 800 DR234-0000 SD-DR234-0000 Tetrabutyltin as ion 10 ug/kg UJ EPA SI Nearshore south 776 DR210-0000 SD-DR206-0000 Tetrabutyltin as ion 5.0 ug/kg UJ EPA SI T-117 EAA 772 DR206-0000 SD-DR208-0000 Tetrabutyltin as ion 5.0 ug/kg UJ EPA SI Navigation north 800 DR234-0000 SD-DR208-0000 Time trabutyltin as ion 5.0 ug/kg U EPA SI Navigation T-117 784 DR218-0000 Tim									U		
EPA SI T-117 EAA 774 DR208-0000 SD-DR208-0000 Silver 0.16 mg/kg Boeing T-117 EAA 892 SD0011 SD0011 Silver 0.40 mg/kg U Boeing T-117 EAA 893 SD0010 SD010 Silver 0.40 mg/kg U EPA SI Navigation north 800 DR234-0000 SD-DR234-0000 Tetrabutyltin as ion 10 ug/kg UJ EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Tetrabutyltin as ion 5.0 ug/kg UJ EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Tetrabutyltin as ion 5.0 ug/kg UJ EPA SI T-117 EAA 774 DR208-0000 SD-DR208-0000 Tetrabutyltin as ion 5.0 ug/kg UJ EPA SI Navigation north 800 DR234-0000 SD-DR208-0000 Tin 2.0 mg/kg U EPA SI Navigation T-117 784 DR218-0000											
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EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Tin 4.0 mg/kg UJ EPA SI T-117 EAA 773 DR207-0000 SD-DR207-0000 Tin 6.0 mg/kg UJ EPA SI T-117 EAA 774 DR208-0000 SD-DR208-0000 Tin 4.0 mg/kg UJ EPA SI Navigation north 800 DR234-0000 SD-DR234-0000 Tributyltin as ion 14 ug/kg J EPA SI Nearshore south 776 DR210-0000 SD-DR210-0000 Tributyltin as ion 12 ug/kg J EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Tributyltin as ion 15 ug/kg J EPA SI T-117 EAA 774 DR208-0000 SD-DR208-0000 Tributyltin as ion 15 ug/kg J EPA SI Navigation north 800 DR234-0000 SD-DR208-0000 Tributyltin as ion 13 ug/kg J EPA SI Navigation T-117											
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EPA SI Navigation T-117 784 DR218-0000 SD-DR218-0000 Vanadium 63 mg/kg EPA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Vanadium 76 mg/kg		•						mg/kg			
EPA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Vanadium 76 mg/kg											
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IERA SI INGRISHORE HORTH I 793 IDKZZ7-UUUU ISD-DKZZ7-UUUU IVANARIIM I 69 Imm/km l											
EPA SI Nearshore south 775 DR209-0000 SD-DR209-0000 Vanadium 39 mg/kg											
EPA SI Nearshore south 775 DR209-0000 SD-DR209-0000 Vanadium 39 mg/kg											
EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Vanadium 81 mg/kg											



прропал	, GG	Location	SedQual		5 cm) sealment		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	OC	OC dw
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Vanadium	61	mg/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Vanadium	55	mg/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Zinc	77	mg/kg			
Plant 2 RFI-2b EPA SI	Navigation T-117	497 784	DUW82-0000 DR218-0000	SD2B-DUW82-0000 SD-DR218-0000	Zinc Zinc	110 96	mg/kg			
EPA SI	Navigation T-117 Nearshore north	771	DR216-0000 DR205-0000	SD-DR216-0000 SD-DR205-0000	Zinc	81	mg/kg mg/kg			
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Zinc	74	mg/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Zinc	66	mg/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Zinc	70	mg/kg			
Boeing	Nearshore south	894	SD0018	SD0018	Zinc	79	mg/kg			
Boeing	Nearshore south Nearshore south	895	SD0019	SD0019 SD0012	Zinc Zinc	86 77	mg/kg			
Boeing Boeing	Nearshore south	897 898	SD0012 SD0009	SD0012 SD0009	Zinc	95	mg/kg mg/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Zinc	93	mg/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Zinc	131	mg/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Zinc	79	mg/kg			
Boeing	T-117 EAA	892	SD0011	SD0011	Zinc	88	mg/kg			
Boeing	T-117 EAA	893	SD0010	SD0010	Zinc	95	mg/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Pesticides 4,4'-DDD	10	ua/ka	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000 SD-DR206-0000	4,4'-DDE	5.0	ug/kg ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	4,4'-DDT	10	ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Aldrin	5.0	ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	alpha-BHC	5.0	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	alpha-Chlordane	5.0	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	alpha-Endosulfan	5.0	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	beta-BHC beta-Endosulfan	5.0	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000 SD-DR206-0000	DDTs (total-calc'd)	10	ug/kg ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Dieldrin	10	ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Endosulfan sulfate	10	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Endrin	10	ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Endrin aldehyde	10	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Endrin ketone	10	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	gamma-BHC gamma-Chlordane	5.0 5.0	ug/kg ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Heptachlor	5.0	ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Heptachlor epoxide	5.0	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Methoxychlor	5.0	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Toxaphene	190	ug/kg	U		
DI DEI		100	DI 11/170 0000	0000 DUILITE 0000	PCBs					
Plant 2 RFI-2b Plant 2 RFI-2b	Navigation north Navigation north	493 494	DUW78-0000 DUW79-0000	SD2B-DUW78-0000 SD2B-DUW79-0000	Aroclor-1016 Aroclor-1016	57 47	ug/kg	U		
Plant 2 RFI-2b	Navigation north	494	DUW80-0000	SD2B-DUW79-0000 SD2B-DUW80-0000	Aroclor-1016	57	ug/kg ug/kg	U		
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Aroclor-1016	62	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Aroclor-1016	20	ug/kg	U		
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Aroclor-1016	68	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Aroclor-1016	20	ug/kg	UJ		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Aroclor-1016	20	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Aroclor-1016	20	ug/kg	U		
EPA SI EPA SI	Nearshore south Nearshore south	775 776	DR209-0000 DR210-0000	SD-DR209-0000 SD-DR210-0000	Aroclor-1016 Aroclor-1016	20	ug/kg ug/kg	UJ		
Boeing	Nearshore south	894	SD0018	SD0018	Aroclor-1016	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	Aroclor-1016	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	Aroclor-1016	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	Aroclor-1016	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Aroclor-1016	20	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Aroclor-1016	20	ug/kg	U		
EPA SI Boeing	T-117 EAA T-117 EAA	774 892	DR208-0000 SD0011	SD-DR208-0000 SD0011	Aroclor-1016 Aroclor-1016	20 19	ug/kg ug/kg	UJ		
Boeing	T-117 EAA	893	SD0011	SD0011	Aroclor-1016	19	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Aroclor-1221	40	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Aroclor-1221	40	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Aroclor-1221	40	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Aroclor-1221	40	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Aroclor-1221	40	ug/kg	U		
EPA SI	Nearshore south	776 894	DR210-0000	SD-DR210-0000 SD0018	Aroclor-1221	40	ug/kg	U		
Boeing Boeing	Nearshore south Nearshore south	894 895	SD0018 SD0019	SD0018 SD0019	Aroclor-1221 Aroclor-1221	38 39	ug/kg ug/kg	U		
Boeing	Nearshore south	897	SD0019	SD0019 SD0012	Aroclor-1221	38	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	Aroclor-1221	40	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Aroclor-1221	40	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Aroclor-1221	40	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Aroclor-1221	40	ug/kg	U		



пропак	7 tt - G11-G1111-Gtt)	Location	SedQual		5 cm) sealment		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	OC	OC dw
Boeing	T-117 EAA	892	SD0011	SD0011	Aroclor-1221	39	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	Aroclor-1221	38	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Aroclor-1232	20	ug/kg	U		
EPA SI EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Aroclor-1232 Aroclor-1232	20	ug/kg	U		
EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Aroclor-1232 Aroclor-1232	20	ug/kg ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Aroclor-1232	20	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Aroclor-1232	20	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	Aroclor-1232	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	Aroclor-1232	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	Aroclor-1232	19	ug/kg	U		
Boeing	Nearshore south T-117 EAA	898	SD0009	SD0009	Aroclor-1232	20	ug/kg	U		
EPA SI EPA SI	T-117 EAA	772 773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	Aroclor-1232 Aroclor-1232	20	ug/kg ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Aroclor-1232	20	ug/kg	U		
Boeing	T-117 EAA	892	SD0011	SD0011	Aroclor-1232	19	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	Aroclor-1232	19	ug/kg	U		
Plant 2 RFI-2b	Navigation north	493	DUW78-0000	SD2B-DUW78-0000	Aroclor-1242	57	ug/kg	U		
Plant 2 RFI-2b	Navigation north	494	DUW79-0000	SD2B-DUW79-0000	Aroclor-1242	47	ug/kg	U		
Plant 2 RFI-2b Plant 2 RFI-2b	Navigation north	495	DUW80-0000	SD2B-DUW80-0000	Aroclor-1242	57	ug/kg	U		
EPA SI	Navigation north Navigation north	496 800	DUW81-0000 DR234-0000	SD2B-DUW81-0000 SD-DR234-0000	Aroclor-1242 Aroclor-1242	62 20	ug/kg	U		
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Aroclor-1242	68	ug/kg ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Aroclor-1242	20	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Aroclor-1242	20	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Aroclor-1242	20	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Aroclor-1242	20	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Aroclor-1242	20	ug/kg	U		
Boeing	Nearshore south	894 895	SD0018 SD0019	SD0018 SD0019	Aroclor-1242 Aroclor-1242	19 20	ug/kg	U		
Boeing Boeing	Nearshore south Nearshore south	897	SD0019 SD0012	SD0019 SD0012	Aroclor-1242	19	ug/kg ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	Aroclor-1242	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Aroclor-1242	20	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Aroclor-1242	20	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Aroclor-1242	20	ug/kg	U		
Boeing	T-117 EAA	892	SD0011	SD0011	Aroclor-1242	19	ug/kg	U		
Boeing Plant 2 RFI-2b	T-117 EAA Navigation north	893 493	SD0010 DUW78-0000	SD0010 SD2B-DUW78-0000	Aroclor-1242 Aroclor-1248	19 57	ug/kg	U		
Plant 2 RFI-2b	Navigation north	493	DUW79-0000	SD2B-DUW79-0000 SD2B-DUW79-0000	Aroclor-1248	47	ug/kg ug/kg	U		
Plant 2 RFI-2b	Navigation north	495	DUW80-0000	SD2B-DUW80-0000	Aroclor-1248	57	ug/kg	U		
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Aroclor-1248	62	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Aroclor-1248	20	ug/kg	U		
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Aroclor-1248	68	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Aroclor-1248	20	ug/kg	U		
EPA SI EPA SI	Nearshore north	771 793	DR205-0000	SD-DR205-0000	Aroclor-1248	20	ug/kg	U		
EPA SI	Nearshore north Nearshore south	775	DR227-0000 DR209-0000	SD-DR227-0000 SD-DR209-0000	Aroclor-1248 Aroclor-1248	20	ug/kg ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Aroclor-1248	20	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	Aroclor-1248	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	Aroclor-1248	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	Aroclor-1248	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	Aroclor-1248	20	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	772	DR206-0000 DR207-0000	SD-DR206-0000	Aroclor-1248	20	ug/kg	U		
EPA SI	T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	Aroclor-1248 Aroclor-1248	20	ug/kg ug/kg	U		
Boeing	T-117 EAA	892	SD0011	SD0011	Aroclor-1248	19	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	Aroclor-1248	19	ug/kg	U		
Plant 2 RFI-2b	Navigation north	493	DUW78-0000	SD2B-DUW78-0000	Aroclor-1254	110	ug/kg			
Plant 2 RFI-2b	Navigation north	494	DUW79-0000	SD2B-DUW79-0000	Aroclor-1254	47	ug/kg	U		
Plant 2 RFI-2b	Navigation north	495	DUW80-0000	SD2B-DUW80-0000	Aroclor-1254	91	ug/kg			
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Aroclor-1254	106	ug/kg			
EPA SI Plant 2 RFI-2b	Navigation north Navigation T-117	800 497	DR234-0000 DUW82-0000	SD-DR234-0000 SD2B-DUW82-0000	Aroclor-1254 Aroclor-1254	29 88	ug/kg			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Aroclor-1254	46	ug/kg ug/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Aroclor-1254	20	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Aroclor-1254	20	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Aroclor-1254	30	ug/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Aroclor-1254	245	ug/kg			
Boeing	Nearshore south	894	SD0018	SD0018	Aroclor-1254	81	ug/kg			
Boeing	Nearshore south	895	SD0019	SD0019	Aroclor 1254	110	ug/kg			
Boeing Boeing	Nearshore south Nearshore south	897 898	SD0012 SD0009	SD0012 SD0009	Aroclor-1254 Aroclor-1254	99 120	ug/kg ug/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Aroclor-1254 Aroclor-1254	29	ug/kg ug/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Aroclor-1254	700	ug/kg	U		
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Event	Dogion	Location Number	SedQual Sample ID	Sample ID	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	Region T-117 EAA	774	DR208-0000	SD-DR208-0000	Aroclor-1254	102	ug/kg	Q	OC	OC uw
Boeing	T-117 EAA	892	SD0011	SD0011	Aroclor-1254	370	ug/kg	UJ		
Boeing	T-117 EAA	893	SD0010	SD0010	Aroclor-1254	80	ug/kg			
Plant 2 RFI-2b	Navigation north	493	DUW78-0000	SD2B-DUW78-0000	Aroclor-1260	100	ug/kg			
Plant 2 RFI-2b	Navigation north	494	DUW79-0000	SD2B-DUW79-0000	Aroclor-1260	47	ug/kg	U		
Plant 2 RFI-2b	Navigation north	495	DUW80-0000	SD2B-DUW80-0000	Aroclor-1260	57	ug/kg	J		
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Aroclor-1260	124	ug/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Aroclor-1260	25	ug/kg			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Aroclor-1260	54	ug/kg			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Aroclor-1260	41	ug/kg	J		
EPA SI EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Aroclor-1260 Aroclor-1260	35 25	ug/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Aroclor-1260	37	ug/kg ug/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Aroclor-1260	130	ug/kg			
Boeing	Nearshore south	894	SD0018	SD0018	Aroclor-1260	120	ug/kg			
Boeing	Nearshore south	895	SD0019	SD0019	Aroclor-1260	83	ug/kg			
Boeing	Nearshore south	897	SD0012	SD0012	Aroclor-1260	71	ug/kg			
Boeing	Nearshore south	898	SD0009	SD0009	Aroclor-1260	75	ug/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Aroclor-1260	176	ug/kg			
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Aroclor-1260	12000	ug/kg			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Aroclor-1260	286	ug/kg			
Boeing	T-117 EAA	892	SD0011	SD0011	Aroclor-1260	2400	ug/kg			
Boeing	T-117 EAA	893	SD0010	SD0010	Aroclor-1260	97	ug/kg			
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-101	6.9	ug/kg	J		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-101	1.0	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-101	5.0	ug/kg	J		
NOAA NOAA	Nearshore north Nearshore north	300 309	WST09-01 WST10-08	WST09-01 WST10-08	PCB-101 PCB-101	22 31	ug/kg	J		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-101	1.0	ug/kg ug/kg	J		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-101	1.0	ug/kg	UJ		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-101	140	ug/kg	J		
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-101	1.7	ug/kg	J		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-101	5.0	ug/kg	UJ		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-101	14	ug/kg			
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-101	625	ug/kg	J		
NOAA	T-117 EAA	301	WST09-02	WST09-02	PCB-101	2000	ug/kg	J		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-101	5.0	ug/kg	J		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-101	220	ug/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-101	13	ug/kg	J		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-105	0.35	ug/kg	U		
EPA SI EPA SI	Navigation north Navigation T-117	800 784	DR234-0000 DR218-0000	SD-DR234-0000	PCB-105 PCB-105	1.0 2.0	ug/kg	U		
NOAA	Nearshore north	300	WST09-01	SD-DR218-0000 WST09-01	PCB-105 PCB-105	0.92	ug/kg ug/kg	U		
NOAA	Nearshore north	309	WST109-01	WST10-08	PCB-105	2.5	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-105	1.0	ug/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-105	1.0	ug/kg	UJ		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-105	4.6	ug/kg			
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-105	0.38	ug/kg	J		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-105	1.0	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-105	8.0	ug/kg			
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-105	9.9	ug/kg			
NOAA	T-117 EAA T-117 EAA	301	WST09-02	WST09-02	PCB-105	38	ug/kg	111		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	PCB-105 PCB-105	1.0	ug/kg	UJ		
EPA SI	T-117 EAA	774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	PCB-105	2.0	ug/kg ug/kg	J		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-110	1.5	ug/kg	0		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-110	2.7	ug/kg ug/kg			
NOAA	Nearshore north	309	WST10-08	WST10-08	PCB-110	7.4	ug/kg			
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-110	19	ug/kg			
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-110	0.88	ug/kg			
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-110	68	ug/kg			
NOAA	T-117 EAA	301	WST09-02	WST09-02	PCB-110	240	ug/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-114	1.0	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-114	1.0	ug/kg	UJ		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-114	1.0	ug/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-114	1.0	ug/kg	UJ		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-114	1.0	ug/kg	UJ		
EPA SI EPA SI	Nearshore south T-117 EAA	776 772	DR210-0000 DR206-0000	SD-DR210-0000 SD-DR206-0000	PCB-114 PCB-114	1.0	ug/kg	U		
EPA SI	T-117 EAA	773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	PCB-114 PCB-114	1.0	ug/kg ug/kg	UJ		
	T-117 EAA	774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	PCB-114 PCB-114	1.0	ug/kg ug/kg	UJ		
FPA SI		1 11+	211200 0000	22 211200 0000	. 35 117	1.0	ug/Ng			
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-118	3.8	ug/kg	U		



• •		Location	SedQual	`	5 cm) scament		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	ОС	OC dw
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-118	5.0	ug/kg	J		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-118	2.7	ug/kg			
NOAA EPA SI	Nearshore north Nearshore north	309 771	WST10-08 DR205-0000	WST10-08 SD-DR205-0000	PCB-118 PCB-118	5.2 1.0	ug/kg ug/kg	UJ		
EPA SI	Nearshore north	793	DR203-0000 DR227-0000	SD-DR203-0000 SD-DR227-0000	PCB-118	1.0	ug/kg	UJ		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-118	6.8	ug/kg			
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-118	0.73	ug/kg	J		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-118	2.0	ug/kg	J		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-118	18	ug/kg			
NOAA NOAA	T-117 EAA T-117 EAA	248 301	WIT07-01 WST09-02	WIT07-01 WST09-02	PCB-118 PCB-118	9.4	ug/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-118	45 1.0	ug/kg ug/kg	J		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-118	36	ug/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-118	5.0	ug/kg	J		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-123	1.0	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-123	1.0	ug/kg	UJ		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-123	1.0	ug/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-123	1.0	ug/kg	UJ		
EPA SI EPA SI	Nearshore south Nearshore south	775 776	DR209-0000 DR210-0000	SD-DR209-0000 SD-DR210-0000	PCB-123 PCB-123	1.0 3.0	ug/kg ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-123	1.0	ug/kg	UJ		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-123	1.0	ug/kg	UJ		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-123	1.0	ug/kg	UJ		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-126	0.38	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-126	1.0	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-126	1.0	ug/kg	UJ		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-126	0.24	ug/kg	U		
NOAA EPA SI	Nearshore north Nearshore north	309 771	WST10-08 DR205-0000	WST10-08 SD-DR205-0000	PCB-126 PCB-126	0.23 1.0	ug/kg	U		
EPA SI	Nearshore north	793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	PCB-126	1.0	ug/kg ug/kg	UJ		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-126	0.23	ug/kg	U		
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-126	0.18	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-126	1.0	ug/kg	UJ		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-126	1.0	ug/kg	U		
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-126	0.21	ug/kg	U		
NOAA EPA SI	T-117 EAA T-117 EAA	301 772	WST09-02 DR206-0000	WST09-02 SD-DR206-0000	PCB-126 PCB-126	0.28 1.0	ug/kg ug/kg	U UJ		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-126	1.0	ug/kg	UJ		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-126	1.0	ug/kg	UJ		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-128	0.37	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-128	1.0	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-128	1.0	ug/kg	J		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-128	7.5	ug/kg	U		
NOAA	Nearshore north	309	WST10-08	WST10-08	PCB-128	3.9	ug/kg	U		
EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	PCB-128 PCB-128	1.0	ug/kg ug/kg	UJ		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-128	25	ug/kg	- 00		
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-128	1.1	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-128	1.0	ug/kg	UJ		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-128	5.0	ug/kg			
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-128 PCB-128	108	ug/kg	J		
NOAA EPA SI	T-117 EAA T-117 EAA	301 772	WST09-02 DR206-0000	WST09-02 SD-DR206-0000	PCB-128	350 1.0	ug/kg ug/kg	J UJ		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-128	43	ug/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-128	2.0	ug/kg	J		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-138	1.3	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-138	3.0	ug/kg			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-138	8.0	ug/kg	J		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-138	4.7	ug/kg			
NOAA	Nearshore north	309	WST10-08	WST10-08	PCB-138	7.0	ug/kg			
EPA SI EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-138	3.0	ug/kg	J		
NOAA	Nearshore north Nearshore south	793 249	DR227-0000 WIT07-02	SD-DR227-0000 WIT07-02	PCB-138 PCB-138	2.0	ug/kg ug/kg	J		
NOAA	Nearshore south	250	WIT07-02	WIT07-03	PCB-138	0.86	ug/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-138	5.0	ug/kg			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-138	29	ug/kg			
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-138	165	ug/kg			
NOAA	T-117 EAA	301	WST09-02	WST09-02	PCB-138	525	ug/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-138	15	ug/kg	J		
EPA SI	T-117 EAA	773 774	DR207-0000	SD-DR207-0000	PCB-138	920	ug/kg	J		
EPA SI NOAA	T-117 EAA Navigation north	32	DR208-0000 CH04-04	SD-DR208-0000 CH04-04	PCB-138 PCB-153	32 4.9	ug/kg ug/kg	J		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-153	3.0	ug/kg ug/kg	J		
2170	i tarigation notti	500	D11207-0000	05-DIV204-0000	1 05 100	5.0	ug/kg	l		



1-1		Location	SedQual	(1	5 cm) scament		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	ОС	OC dw
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-153	7.0	ug/kg	J		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-153	18	ug/kg			
NOAA EPA SI	Nearshore north Nearshore north	309 771	WST10-08 DR205-0000	WST10-08 SD-DR205-0000	PCB-153 PCB-153	21 3.0	ug/kg	J		
EPA SI	Nearshore north	793	DR227-0000	SD-DR203-0000 SD-DR227-0000	PCB-153	2.0	ug/kg ug/kg	J		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-153	110	ug/kg	Ü		
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-153	1.2	ug/kg			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-153	4.0	ug/kg	J		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-153	16	ug/kg			
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-153	525	ug/kg			
NOAA EPA SI	T-117 EAA T-117 EAA	301 772	WST09-02 DR206-0000	WST09-02 SD-DR206-0000	PCB-153 PCB-153	1550 14	ug/kg	J		
EPA SI	T-117 EAA	773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	PCB-153	900	ug/kg ug/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-153	27	ug/kg	J		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-156	0.33	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-156	1.0	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-156	1.0	ug/kg	J		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-156	0.22	ug/kg	U		
NOAA	Nearshore north	309	WST10-08	WST10-08	PCB-156	0.72	ug/kg			
EPA SI	Nearshore north	771	DR205-0000 DR227-0000	SD-DR205-0000	PCB-156	1.0	ug/kg	UJ		
EPA SI NOAA	Nearshore north Nearshore south	793 249	WIT07-02	SD-DR227-0000 WIT07-02	PCB-156 PCB-156	1.0 2.8	ug/kg ug/kg	UJ		
NOAA	Nearshore south	250	WIT07-02	WIT07-03	PCB-156	0.15	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-156	1.0	ug/kg	UJ		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-156	3.0	ug/kg			
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-156	11	ug/kg			
NOAA	T-117 EAA	301	WST09-02	WST09-02	PCB-156	34	ug/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-156	1.0	ug/kg	UJ		
EPA SI EPA SI	T-117 EAA T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	PCB-156 PCB-156	35 1.0	ug/kg ug/kg	J		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-157	0.29	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-157	1.0	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-157	1.0	ug/kg	UJ		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-157	0.19	ug/kg	U		
NOAA	Nearshore north	309	WST10-08	WST10-08	PCB-157	0.18	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-157	1.0	ug/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-157	1.0	ug/kg	UJ		
NOAA NOAA	Nearshore south Nearshore south	249 250	WIT07-02 WIT07-03	WIT07-02 WIT07-03	PCB-157 PCB-157	0.18 0.14	ug/kg ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-157	1.0	ug/kg	UJ		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-157	1.0	ug/kg	U		
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-157	3.7	ug/kg			
NOAA	T-117 EAA	301	WST09-02	WST09-02	PCB-157	5.1	ug/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-157	1.0	ug/kg	UJ		
EPA SI	T-117 EAA	773	DR207-0000 DR208-0000	SD-DR207-0000	PCB-157	27	ug/kg	UJ		
EPA SI EPA SI	T-117 EAA Navigation north	774 800	DR208-0000 DR234-0000	SD-DR208-0000 SD-DR234-0000	PCB-157 PCB-167	2.0 1.0	ug/kg	UJ		
EPA SI	Navigation T-117	784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	PCB-167	1.0	ug/kg ug/kg	UJ		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-167	1.0	ug/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-167	1.0	ug/kg	UJ		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-167	1.0	ug/kg	UJ		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-167	2.0	ug/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-167	1.0	ug/kg	UJ		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-167	19	ug/kg	UJ		
EPA SI NOAA	T-117 EAA Navigation north	774 32	DR208-0000 CH04-04	SD-DR208-0000 CH04-04	PCB-167 PCB-169	1.0 0.90	ug/kg	UJ		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-169	1.0	ug/kg ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-169	1.0	ug/kg	U		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-169	0.60	ug/kg	U		
NOAA	Nearshore north	309	WST10-08	WST10-08	PCB-169	0.57	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-169	1.0	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-169	1.0	ug/kg	U		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-169	0.56	ug/kg	U		
NOAA EPA SI	Nearshore south	250 775	WIT07-03	WIT07-03	PCB-169	0.44	ug/kg	U UJ		
EPA SI	Nearshore south Nearshore south	775 776	DR209-0000 DR210-0000	SD-DR209-0000 SD-DR210-0000	PCB-169 PCB-169	1.0	ug/kg ug/kg	U		
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-169	0.51	ug/kg	U		
NOAA	T-117 EAA	301	WST09-02	WST09-02	PCB-169	0.68	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-169	1.0	ug/kg	UJ		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-169	1.0	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-169	1.0	ug/kg	UJ		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-170	0.84	ug/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-170	1.0	ug/kg			



Event	Region	Location Number	SedQual Sample ID	Sample ID	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-170	2.0	ug/kg	J	00	OC UW
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-170	5.0	ug/kg	0		
NOAA	Nearshore north	309	WST10-08	WST10-08	PCB-170	4.4	ug/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-170	1.0	ug/kg	J		-
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-170	1.0	ug/kg	UJ		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-170	38	ug/kg			
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-170	0.16	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-170	2.0	ug/kg	J		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-170	7.0	ug/kg	U		
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-170	190	ug/kg			
NOAA	T-117 EAA	301	WST09-02	WST09-02	PCB-170	560	ug/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-170	6.0	ug/kg	J		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-170	320	ug/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-170	15	ug/kg	J		
EPA SI EPA SI	Navigation north	800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	PCB-18 PCB-18	1.0	ug/kg	UJ		
EPA SI	Navigation T-117 Nearshore north	771	DR216-0000 DR205-0000	SD-DR216-0000 SD-DR205-0000	PCB-18	1.0	ug/kg ug/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-18	1.0	ug/kg	UJ		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-18	1.0	ug/kg	U		-
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-18	1.0	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-18	1.0	ug/kg	UJ		Г
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-18	1.0	ug/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-18	1.0	ug/kg	UJ		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-180	1.9	ug/kg			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-180	2.0	ug/kg			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-180	4.0	ug/kg			
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-180	9.2	ug/kg			
NOAA	Nearshore north	309	WST10-08	WST10-08	PCB-180	6.8	ug/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-180	3.0	ug/kg	J		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-180	2.0	ug/kg	J		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-180	64	ug/kg			
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-180	0.15	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-180	3.0	ug/kg	J		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-180	7.0	ug/kg			
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	PCB-180	310	ug/kg			
NOAA EPA SI	T-117 EAA	301	WST09-02	WST09-02	PCB-180	965 12	ug/kg			
EPA SI	T-117 EAA T-117 EAA	772 773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	PCB-180 PCB-180	750	ug/kg	J		
EPA SI	T-117 EAA	774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	PCB-180	24	ug/kg ug/kg	J		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-187	2.0	ug/kg	J		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR234-0000 SD-DR218-0000	PCB-187	3.0	ug/kg			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-187	2.0	ug/kg	J		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-187	1.0	ug/kg	J		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-187	2.0	ug/kg	J		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-187	4.0	ug/kg			Г
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-187	8.0	ug/kg	J		Г
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-187	360	ug/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-187	13	ug/kg	J		
NOAA	Navigation north	32	CH04-04	CH04-04	PCB-189	0.41	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-189	1.0	ug/kg	U		1
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCB-189	1.0	ug/kg	U		
NOAA	Nearshore north	300	WST09-01	WST09-01	PCB-189	0.27	ug/kg	U		
NOAA	Nearshore north	309	WST10-08	WST10-08	PCB-189	0.26	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-189	1.0	ug/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-189	1.0	ug/kg	UJ		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	PCB-189	0.78	ug/kg	J		
NOAA	Nearshore south	250	WIT07-03	WIT07-03	PCB-189	0.19	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-189	1.0	ug/kg	UJ		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-189 PCB-189	1.0	ug/kg	U		
NOAA NOAA	T-117 EAA T-117 EAA	248 301	WIT07-01 WST09-02	WIT07-01 WST09-02	PCB-189 PCB-189	4.1 12	ug/kg			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-189 PCB-189	1.0	ug/kg ug/kg	UJ		
EPA SI	T-117 EAA	773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	PCB-189	1.0	ug/kg ug/kg	J		
EPA SI	T-117 EAA	774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	PCB-189	1.0	ug/kg	UJ		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	PCB-195	1.0	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR234-0000 SD-DR218-0000	PCB-195	1.0	ug/kg	UJ		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCB-195	1.0	ug/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCB-195	1.0	ug/kg	UJ		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	PCB-195	1.0	ug/kg	UJ		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCB-195	1.0	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCB-195	1.0	ug/kg	J		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCB-195	49	ug/kg	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCB-195	2.0	ug/kg	J		



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EPA SI Navig EPA SI Near EPA SI T-11: EPA SI T-11: EPA SI T-11: EPA SI Navig EPA SI Near EPA SI T-11: EPA SI Near EPA SI T-11: EPA SI T-11: EPA SI T-11: EPA SI Navig EPA SI Near	vigation T-117 arshore north arshore south arshore south arshore south l17 EAA l17 EAA vigation north vigation T-117 arshore north arshore north arshore south l17 EAA l17 EAA vigation north vigation T-117 arshore north arshore south l17 EAA l17 EAA vigation north vigation T-117 arshore north arshore south l17 EAA l17 EAA l17 EAA vigation north vigation T-117 arshore north arshore north arshore north arshore south l17 EAA l17 EAA	784 771 793 775 776 772 773 774 800 784 771 793 775 776 772 773 774 800 784 771 793 774 800 784 771 797	DR218-0000 DR205-0000 DR205-0000 DR209-0000 DR209-0000 DR206-0000 DR208-0000 DR208-0000 DR208-0000 DR208-0000 DR208-0000 DR208-0000 DR208-0000 DR209-0000 DR209-0000 DR209-0000 DR208-0000	SD-DR218-0000 SD-DR205-0000 SD-DR209-0000 SD-DR209-0000 SD-DR206-0000 SD-DR206-0000 SD-DR208-0000 SD-DR208-0000 SD-DR208-0000 SD-DR218-0000 SD-DR218-0000 SD-DR205-0000 SD-DR227-0000 SD-DR209-0000 SD-DR206-0000 SD-DR206-0000 SD-DR206-0000 SD-DR208-0000	PCB-206 PCB-206 PCB-206 PCB-206 PCB-206 PCB-206 PCB-206 PCB-206 PCB-206 PCB-208 PCB-28	1.0 1.0 1.0 1.0 1.0 1.0 1.0 21 1.0 1.0 1.0 1.0 1.0	ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg ug/kg	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		
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EPA SI T-11: EPA SI T-11: EPA SI T-11: EPA SI T-11: EPA SI Navig EPA SI Near EPA SI Near EPA SI Near EPA SI Near EPA SI T-11: EPA SI T-11: EPA SI T-11: EPA SI Navig EPA SI Navig EPA SI T-11: EPA SI Navig EPA SI Navig EPA SI Navig EPA SI Near EPA SI T-11: EPA SI T-11: EPA SI T-11:	117 EAA 117 EAA 117 EAA vigation north vigation T-117 arshore north arshore south arshore south 117 EAA 117 EAA	772 773 774 800 784 771 793 775	DR206-0000 DR207-0000 DR208-0000 DR234-0000 DR218-0000 DR205-0000	SD-DR206-0000 SD-DR207-0000 SD-DR208-0000 SD-DR234-0000	PCB-28 PCB-28	1.0	ug/kg			1
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EPA SI Near EPA SI Near EPA SI Near EPA SI T-11 EPA SI T-11 EPA SI T-11 EPA SI Navig EPA SI Near EPA SI T-11	arshore north arshore south arshore south 117 EAA 117 EAA	793 775		SD-DR218-0000	PCB-44	2.0	ug/kg	J		
EPA SI Near EPA SI Near EPA SI T-11 EPA SI T-11 EPA SI T-11 EPA SI Navig EPA SI Near EPA SI T-11	arshore south arshore south 17 EAA 17 EAA	775		SD-DR205-0000	PCB-44	1.0	ug/kg	UJ		
EPA SI Near EPA SI T-117 EPA SI T-111 EPA SI T-111 EPA SI Navig EPA SI Near EPA SI T-117 EPA SI T-111 EPA SI T-111 EPA SI T-111 EPA SI T-111	arshore south 117 EAA 117 EAA		DR227-0000	SD-DR227-0000	PCB-44	1.0	ug/kg	UJ		
EPA SI T-11: EPA SI T-11: EPA SI T-11: EPA SI Navig EPA SI Near EPA SI T-11: EPA SI T-11: EPA SI T-11: EPA SI T-11:	17 EAA 17 EAA 17 EAA	776	DR209-0000	SD-DR209-0000	PCB-44	1.0	ug/kg	UJ		
EPA SI T-112 EPA SI T-112 EPA SI Navig EPA SI Navig EPA SI Near EPA SI T-112 EPA SI T-112 EPA SI T-112 EPA SI T-112	117 EAA 117 EAA		DR210-0000	SD-DR210-0000	PCB-44	2.0	ug/kg			
EPA SI T-117 EPA SI Navig EPA SI Near EPA SI T-117 EPA SI T-117 EPA SI T-117 EPA SI T-117	I17 EAA		DR206-0000	SD-DR206-0000	PCB-44	1.0	ug/kg	UJ		
EPA SI Navig EPA SI Navig EPA SI Near EPA SI T-111 EPA SI T-111			DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	PCB-44 PCB-44	5.0 1.0	ug/kg	J		
EPA SI Navig EPA SI Near EPA SI Near EPA SI Near EPA SI Near EPA SI T-11 EPA SI T-111 EPA SI T-111	vigation north		DR234-0000	SD-DR234-0000	PCB-55	1.0	ug/kg ug/kg	J		
EPA SI Near EPA SI Near EPA SI Near EPA SI Near EPA SI T-112 EPA SI T-113 EPA SI T-111 EPA SI T-112	vigation north vigation T-117		DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	PCB-55	4.0	ug/kg ug/kg	J		
EPA SI Near EPA SI Near EPA SI Near EPA SI T-112 EPA SI T-113 EPA SI T-111 EPA SI T-112	arshore north		DR205-0000	SD-DR205-0000	PCB-55	1.0	ug/kg	UJ		
EPA SI Near EPA SI T-117 EPA SI T-117 EPA SI T-117	arshore north		DR227-0000	SD-DR227-0000	PCB-55	1.0	ug/kg	UJ		
EPA SI T-111 EPA SI T-111 EPA SI T-111	arshore south	775	DR209-0000	SD-DR209-0000	PCB-55	1.0	ug/kg	UJ		
EPA SI T-117 EPA SI T-117	arshore south		DR210-0000	SD-DR210-0000	PCB-55	4.0	ug/kg			
EPA SI T-11	117 EAA		DR206-0000	SD-DR206-0000	PCB-55	1.0	ug/kg	UJ		
	117 EAA		DR207-0000	SD-DR207-0000	PCB-55	19	ug/kg	J		
EPA SI INAVI			DR208-0000	SD-DR208-0000	PCB-55	2.0	ug/kg	J		
	vigation north vigation T-117		DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	PCB-66 PCB-66	7.0	ug/kg ug/kg			
	arshore north		DR205-0000	SD-DR205-0000	PCB-66	1.0	ug/kg	UJ		
	arshore north		DR227-0000	SD-DR227-0000	PCB-66	1.0	ug/kg	UJ		
	arshore south		DR209-0000	SD-DR209-0000	PCB-66	2.0	ug/kg	J		
EPA SI Near	arshore south	776	DR210-0000	SD-DR210-0000	PCB-66	11	ug/kg			
	117 EAA		DR206-0000	SD-DR206-0000	PCB-66	5.0	ug/kg	UJ		
	I17 EAA		DR207-0000	SD-DR207-0000	PCB-66	250	ug/kg	UJ		
	117 EAA		DR208-0000	SD-DR208-0000	PCB-66	11	ug/kg	J		
	vigation north		CH04-04	CH04-04	PCB-77	0.41	ug/kg	U		
	vigation north vigation T-117		DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	PCB-77	1.0	ug/kg ug/kg	UJ		
	arshore north		WST09-01	WST09-01	PCB-77	0.27	ug/kg ug/kg	U		
	arshore north		WST10-08	WST10-08	PCB-77	0.25	ug/kg	U		
	arshore north		DR205-0000	SD-DR205-0000	PCB-77	1.0	ug/kg	UJ		
EPA SI Near	arshore north	793	DR227-0000	SD-DR227-0000	PCB-77	1.0	ug/kg	UJ		
	arshore south		WIT07-02	WIT07-02	PCB-77	0.25	ug/kg	U		
	arshore south		WIT07-03	WIT07-03	PCB-77	0.19	ug/kg	U		
	arshore south		DR209-0000	SD-DR209-0000	PCB-77	1.0	ug/kg	U		
	arshore south		DR210-0000	SD-DR210-0000	PCB-77 PCB-77	1.0	ug/kg	U		
	I 17 EAA I 17 EAA		WIT07-01 WST09-02	WIT07-01 WST09-02	PCB-77	0.23	ug/kg ug/kg	U		
	I17 EAA		DR206-0000	SD-DR206-0000	PCB-77	1.0	ug/kg	UJ		
	117 EAA		DR207-0000	SD-DR207-0000	PCB-77	1.0	ug/kg	UJ		
EPA SI T-11	117 EAA	774	DR208-0000	SD-DR208-0000	PCB-77	1.0	ug/kg	U		
EPA SI Navio	vigation north	800	DR234-0000	SD-DR234-0000	PCB-81	1.0	ug/kg	U		
	vigation T-117		DR218-0000	SD-DR218-0000	PCB-81	1.0	ug/kg	UJ		
	arshore north		DR205-0000	SD-DR205-0000	PCB-81	1.0	ug/kg	U		
	arshore north		DR227-0000	SD-DR227-0000	PCB-81	1.0	ug/kg	U		
	arshore south		DR209-0000	SD-DR209-0000	PCB-81	1.0	ug/kg	UJ		
	arshore south		DR210-0000 DR206-0000	SD-DR210-0000 SD-DR206-0000	PCB-81 PCB-81	1.0	ug/kg ug/kg	UJ		
	I17 EAA		DR207-0000	SD-DR200-0000 SD-DR207-0000	PCB-81	1.0	ug/kg ug/kg	U		
	117 EAA		DR208-0000	SD-DR208-0000	PCB-81	1.0	ug/kg	UJ		
	vigation north		CH04-04	CH04-04	PCBs (total calc'd)	22	ug/kg		1.8	mg/kg OC
	vigation north		DUW78-0000	SD2B-DUW78-0000	PCBs (total calc'd)	210	ug/kg		9.1	mg/kg OC
Plant 2 RFI-2b Naviç	vigation north	494	DUW79-0000	SD2B-DUW79-0000	PCBs (total calc'd)	47	ug/kg	U	3.9	mg/kg OC



1-1		Location	SedQual	(1	5 cm) sediment		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	oc	OC dw
Plant 2 RFI-2b	Navigation north	495	DUW80-0000	SD2B-DUW80-0000	PCBs (total calc'd)	148	ug/kg		8.2	mg/kg OC
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	PCBs (total calc'd)	230	ug/kg		12	mg/kg OC
EPA SI Plant 2 RFI-2b	Navigation north Navigation T-117	800 497	DR234-0000 DUW82-0000	SD-DR234-0000 SD2B-DUW82-0000	PCBs (total calc'd) PCBs (total calc'd)	54 142	ug/kg ug/kg		3.1 9.5	mg/kg OC mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	PCBs (total calc'd)	87	ug/kg	J	3.4	mg/kg OC
NOAA	Nearshore north	300	WST09-01	WST09-01	PCBs (total calc'd)	80	ug/kg		3.4	mg/kg OC
NOAA	Nearshore north	309	WST10-08	WST10-08	PCBs (total calc'd)	110	ug/kg		7.5	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	PCBs (total calc'd)	35	ug/kg		1.6	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	PCBs (total calc'd)	25	ug/kg		1.3	mg/kg OC
NOAA NOAA	Nearshore south	249 250	WIT07-02 WIT07-03	WIT07-02 WIT07-03	PCBs (total calc'd) PCBs (total calc'd)	550 7.1	ug/kg		82	mg/kg OC
EPA SI	Nearshore south Nearshore south	775	DR209-0000	SD-DR209-0000	PCBs (total calc'd)	67	ug/kg ug/kg		6.5	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	PCBs (total calc'd)	375	ug/kg		26	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	PCBs (total calc'd)	201	ug/kg		20	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	PCBs (total calc'd)	193	ug/kg		15	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	PCBs (total calc'd)	170	ug/kg		21	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	PCBs (total calc'd)	195	ug/kg		16	mg/kg OC
NOAA NOAA	T-117 EAA T-117 EAA	248 301	WIT07-01 WST09-02	WIT07-01 WST09-02	PCBs (total calc'd) PCBs (total calc'd)	2600 7850	ug/kg		840 410	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	PCBs (total calc'd)	205	ug/kg ug/kg	J	6.9	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	PCBs (total calc'd)	12000	ug/kg		380	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	PCBs (total calc'd)	388	ug/kg	J	30	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	PCBs (total calc'd)	2400	ug/kg		210	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	PCBs (total calc'd)	177	ug/kg		15	mg/kg OC
	T		DD000 0000	00.000000000000000000000000000000000000	Dioxins & furans		,			
EPA SI EPA SI	T-117 EAA T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	1,2,3,4,6,7,8-HpCDD 1,2,3,4,6,7,8-HpCDF	59 9.9	pg/g	J		
EPA SI	T-117 EAA	772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	1,2,3,4,6,7,8-PCDF	1.1	pg/g pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,3,4,7,8-HxCDD	0.99	pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,3,4,7,8-HxCDF	1.1	pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,3,6,7,8-HxCDD	2.8	pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,3,6,7,8-HxCDF	0.97	pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,3,7,8,9-HxCDD	2.3	pg/g	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	1,2,3,7,8,9-HxCDF 1,2,3,7,8-PeCDD	1.2 1.5	pg/g pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,3,7,8-PeCDF	1.1	pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,3,4,6,7,8-HxCDF	1.1	pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,3,4,7,8-PeCDF	1.1	pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,3,7,8-TCDD	0.39	pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,3,7,8-TCDD TEQ	2.6	pg/g			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,3,7,8-TCDF	0.75	pg/g	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	OCDD OCDF	680 26	pg/g pg/g	J		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Total HpCDD	140	pg/g			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Total HpCDF	31	pg/g			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Total HxCDD	7.5	pg/g			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Total HxCDF	6.2	pg/g			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Total PeCDD	1.5	pg/g	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Total PeCDF	7.1	pg/g			
EPA SI EPA SI	T-117 EAA T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	Total TCDD Total TCDF	0.97 4.9	pg/g pg/g	U		
LIAGI	1-117 LAA	112	DI\200-0000	3D-DR200-0000	LPAHs	4.3	Pg/g			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Acenaphthene	20	ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Acenaphthene	20	ug/kg	U	0.78	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Acenaphthene	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Acenaphthene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Acenaphthene	20	ug/kg	U	1.9	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Acenaphthene	20	ug/kg	U	1.4	mg/kg OC
Boeing Boeing	Nearshore south Nearshore south	894 895	SD0018 SD0019	SD0018 SD0019	Acenaphthene Acenaphthene	19 20	ug/kg ug/kg	U	1.9 1.5	mg/kg OC mg/kg OC
Boeing	Nearshore south	897	SD0019	SD0019 SD0012	Acenaphthene	19	ug/kg	U	2.3	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Acenaphthene	20	ug/kg	U	1.7	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Acenaphthene	20	ug/kg	U	0.67	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Acenaphthene	120	ug/kg		3.8	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Acenaphthene	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Acenaphthene	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Acenaphthylana	19	ug/kg	U	1.6	mg/kg OC
EPA SI EPA SI	Navigation north Navigation T-117	800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	Acenaphthylene Acenaphthylene	20 20	ug/kg ug/kg	U	1.1 0.78	mg/kg OC mg/kg OC
L. A OI			DIVE 10,0000							
EPA SI			DR205-0000	SD-DR205-0000	Acenaphthylene	20	ug/ka	U	0.90	ma/ka OC
EPA SI EPA SI	Nearshore north	771	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Acenaphthylene Acenaphthylene	20	ug/kg ug/kg	U	0.90 1.0	mg/kg OC mg/kg OC
EPA SI EPA SI			DR205-0000 DR227-0000 DR209-0000	SD-DR205-0000 SD-DR227-0000 SD-DR209-0000	Acenaphthylene Acenaphthylene Acenaphthylene	20 20 20	ug/kg ug/kg ug/kg		1.0 1.9	mg/kg OC mg/kg OC mg/kg OC
EPA SI	Nearshore north Nearshore north	771 793	DR227-0000	SD-DR227-0000	Acenaphthylene	20	ug/kg	U	1.0	mg/kg OC



		Location	SedQual	<u> </u>	15 cm) sealment		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	ОС	OC dw
Boeing	Nearshore south	895	SD0019	SD0019	Acenaphthylene	20	ug/kg	U	1.5	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Acenaphthylene	19	ug/kg	U	2.3	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Acenaphthylene	20	ug/kg	U	1.7	mg/kg OC
EPA SI EPA SI	T-117 EAA T-117 EAA	772 773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	Acenaphthylene Acenaphthylene	20	ug/kg ug/kg	U	0.67 0.63	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR207-0000 SD-DR208-0000	Acenaphthylene	20	ug/kg ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Acenaphthylene	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Acenaphthylene	19	ug/kg	U	1.6	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Anthracene	20	ug/kg		1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Anthracene	30	ug/kg		1.2	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Anthracene	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Anthracene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Anthracene	20	ug/kg	U	1.9	mg/kg OC
EPA SI	Nearshore south Nearshore south	776 894	DR210-0000 SD0018	SD-DR210-0000 SD0018	Anthracene Anthracene	20 42	ug/kg		1.4 4.2	mg/kg OC
Boeing Boeing	Nearshore south	895	SD0018	SD0018 SD0019	Anthracene	22	ug/kg ug/kg		1.7	mg/kg OC mg/kg OC
Boeing	Nearshore south	897	SD0019	SD0019	Anthracene	19	ug/kg	U	2.3	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Anthracene	24	ug/kg		2.0	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Anthracene	20	ug/kg	U	0.67	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Anthracene	140	ug/kg		4.4	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Anthracene	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Anthracene	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Anthracene	32	ug/kg		2.7	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Fluorene	20	ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Fluorene	20	ug/kg	U	0.78	mg/kg OC
EPA SI EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Fluorene Fluorene	20	ug/kg	U	0.90 1.0	mg/kg OC
EPA SI	Nearshore south	793	DR209-0000	SD-DR227-0000 SD-DR209-0000	Fluorene	20	ug/kg ug/kg	U	1.0	mg/kg OC mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Fluorene	20	ug/kg	U	1.4	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Fluorene	19	ug/kg	U	1.9	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Fluorene	20	ug/kg	U	1.5	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Fluorene	19	ug/kg	U	2.3	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Fluorene	20	ug/kg	U	1.7	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Fluorene	20	ug/kg	U	0.67	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Fluorene	150	ug/kg		4.7	mg/kg OC
EPA SI	T-117 EAA T-117 EAA	774 892	DR208-0000 SD0011	SD-DR208-0000 SD0011	Fluorene Fluorene	20	ug/kg	UJ	1.6 1.8	mg/kg OC
Boeing Boeing	T-117 EAA	893	SD0011	SD0011 SD0010	Fluorene	19	ug/kg ug/kg	U	1.6	mg/kg OC mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Naphthalene	20	ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Naphthalene	20	ug/kg	U	0.78	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Naphthalene	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Naphthalene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Naphthalene	20	ug/kg	U	1.9	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Naphthalene	20	ug/kg	U	1.4	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Naphthalene	19	ug/kg	U	1.9	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Naphthalene	20 19	ug/kg	U	1.5	mg/kg OC
Boeing Boeing	Nearshore south Nearshore south	897 898	SD0012 SD0009	SD0012 SD0009	Naphthalene Naphthalene	20	ug/kg ug/kg	U	2.3	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Naphthalene	3.1	ug/kg ug/kg	U	0.10	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Naphthalene	20	ug/kg	U	0.63	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Naphthalene	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Naphthalene	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Naphthalene	19	ug/kg	U	1.6	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Phenanthrene	90	ug/kg		5.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Phenanthrene	140	ug/kg		5.5	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Phenanthrene	60	ug/kg		2.7	mg/kg OC
EPA SI	Nearshore north Nearshore south	793 775	DR227-0000 DR209-0000	SD-DR227-0000 SD-DR209-0000	Phenanthrene Phenanthrene	50 50	ug/kg		2.5 4.9	mg/kg OC mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Phenanthrene	130	ug/kg ug/kg		9.0	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Phenanthrene	260	ug/kg		26	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Phenanthrene	91	ug/kg		7.0	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Phenanthrene	150	ug/kg		18	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Phenanthrene	110	ug/kg		9.2	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Phenanthrene	80	ug/kg		2.7	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Phenanthrene	2100	ug/kg		66	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Phenanthrene	70	ug/kg	J	5.4	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Phenanthrene	62	ug/kg		5.5	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Phenanthrene	130	ug/kg		11	mg/kg OC
EPA SI EPA SI	Navigation north Navigation T-117	800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	Total LPAH (calc'd) Total LPAH (calc'd)	110 170	ug/kg ug/kg		6.2	mg/kg OC mg/kg OC
EPA SI	Nearshore north	771	DR216-0000 DR205-0000	SD-DR218-0000 SD-DR205-0000	Total LPAH (calc'd)	60				mg/kg OC
		793	DR227-0000	SD-DR227-0000	Total LPAH (calc'd)	50	0			mg/kg OC
EPA SI	Nearshore north	1 00								
EPA SI EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Total LPAH (calc'd)	50				mg/kg OC



		Location	SedQual				Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	ОС	OC dw
Boeing	Nearshore south	894 895	SD0018 SD0019	SD0018 SD0019	Total LPAH (calc'd) Total LPAH (calc'd)	302 113	ug/kg			mg/kg OC mg/kg OC
Boeing Boeing	Nearshore south Nearshore south	897	SD0019 SD0012	SD0019 SD0012	Total LPAH (calc'd)	150)			mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Total LPAH (calc'd)	134	,			mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Total LPAH (calc'd)	80	ug/kg			mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Total LPAH (calc'd)	2510				mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Total LPAH (calc'd)	70	ug/kg	J	5.4	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Total LPAH (calc'd)	62	ug/kg			mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Total LPAH (calc'd)	162	ug/kg		14	mg/kg OC
ED 4 01	No. 2 or Comment	000	DD004 0000	OD DD004 0000	HPAHs	00				
EPA SI EPA SI	Navigation north Navigation T-117	800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	Benzo(a)anthracene Benzo(a)anthracene	90	ug/kg ug/kg		5.1 5.5	mg/kg OC mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR218-0000 SD-DR205-0000	Benzo(a)anthracene	50	ug/kg ug/kg		2.3	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Benzo(a)anthracene	60	ug/kg ug/kg		3.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Benzo(a)anthracene	30	ug/kg		2.9	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Benzo(a)anthracene	100	ug/kg		6.9	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Benzo(a)anthracene	160	ug/kg		16	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Benzo(a)anthracene	86	ug/kg		6.6	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Benzo(a)anthracene	87	ug/kg		11	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Benzo(a)anthracene	100	ug/kg		8.3	mg/kg OC
EPA SI	T-117 EAA T-117 EAA	772	DR206-0000	SD-DR206-0000	Benzo(a)anthracene	80	ug/kg		2.7	mg/kg OC
EPA SI EPA SI	T-117 EAA T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	Benzo(a)anthracene Benzo(a)anthracene	920 50	ug/kg ug/kg	J	29 3.9	mg/kg OC mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD-DR208-0000 SD0011	Benzo(a)anthracene	53	ug/kg ug/kg	J	4.7	mg/kg OC
Boeing	T-117 EAA	893	SD0011	SD0011	Benzo(a)anthracene	120	ug/kg ug/kg		10	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Benzo(a)pyrene	110	ug/kg		6.2	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Benzo(a)pyrene	140	ug/kg		5.5	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Benzo(a)pyrene	50	ug/kg		2.3	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Benzo(a)pyrene	50	ug/kg		2.5	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Benzo(a)pyrene	40	ug/kg		3.9	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Benzo(a)pyrene	130	ug/kg		9.0	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Benzo(a)pyrene	220	ug/kg		22	mg/kg OC
Boeing	Nearshore south	895 897	SD0019 SD0012	SD0019 SD0012	Benzo(a)pyrene	100 110	ug/kg		7.7 13	mg/kg OC
Boeing Boeing	Nearshore south Nearshore south	898	SD0012 SD0009	SD0012 SD0009	Benzo(a)pyrene Benzo(a)pyrene	130	ug/kg ug/kg		11	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Benzo(a)pyrene	80	ug/kg		2.7	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Benzo(a)pyrene	1000	ug/kg		32	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Benzo(a)pyrene	60	ug/kg	J	4.7	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Benzo(a)pyrene	64	ug/kg		5.6	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Benzo(a)pyrene	130	ug/kg		11	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Benzo(g,h,i)perylene	100	ug/kg		3.9	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Benzo(g,h,i)perylene	40	ug/kg		1.8	mg/kg OC
EPA SI EPA SI	Nearshore north Nearshore south	793 775	DR227-0000 DR209-0000	SD-DR227-0000 SD-DR209-0000	Benzo(g,h,i)perylene Benzo(g,h,i)perylene	50 30	ug/kg		2.5 2.9	mg/kg OC mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Benzo(g,h,i)perylene	90	ug/kg ug/kg		6.2	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Benzo(g,h,i)perylene	150	ug/kg		15	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Benzo(g,h,i)perylene	77	ug/kg		5.9	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Benzo(g,h,i)perylene	77	ug/kg		9.4	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Benzo(g,h,i)perylene	97	ug/kg		8.1	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Benzo(g,h,i)perylene	80	ug/kg		2.7	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Benzo(g,h,i)perylene	430	ug/kg		14	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Benzo(g,h,i)perylene	40	ug/kg	J	3.1	mg/kg OC
Boeing Boeing	T-117 EAA T-117 EAA	892 893	SD0011 SD0010	SD0011 SD0010	Benzo(g,h,i)perylene Benzo(g,h,i)perylene	53 97	ug/kg ug/kg		4.7 8.1	mg/kg OC mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Benzo(ghi)perylene	80	ug/kg		4.5	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Benzofluoranthenes (total)	340	ug/kg		13	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Benzofluoranthenes (total)	130	ug/kg		5.9	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Benzofluoranthenes (total)	160	ug/kg		8.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Benzofluoranthenes (total)	90	ug/kg		8.7	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Benzofluoranthenes (total)	300	ug/kg		21	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Benzofluoranthenes (total)	410	ug/kg		41	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Benzofluoranthenes (total)	260	ug/kg		20	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Benzofluoranthenes (total)	240	ug/kg		29	mg/kg OC
Boeing EPA SI	Nearshore south T-117 EAA	898 772	SD0009 DR206-0000	SD0009 SD-DR206-0000	Benzofluoranthenes (total) Benzofluoranthenes (total)	300 220	ug/kg		25 7.4	mg/kg OC mg/kg OC
EPA SI	T-117 EAA T-117 EAA	773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	Benzofluoranthenes (total) Benzofluoranthenes (total)	2900	ug/kg ug/kg		91	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR207-0000 SD-DR208-0000	Benzofluoranthenes (total)	110	ug/kg ug/kg	J	8.5	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Benzofluoranthenes (total)	155	ug/kg		14	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Benzofluoranthenes (total)	320	ug/kg		27	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Benzofluoranthenes (total-calc'd)	240	ug/kg		14	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Chrysene	130	ug/kg		7.3	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Chrysene	210	ug/kg		8.2	mg/kg OC
oi	Nearshore north	771	DR205-0000	SD-DR205-0000	Chrysene	100	ug/kg		4.5	mg/kg OC
EPA SI EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Chrysene	90	ug/kg		4.5	mg/kg OC



_		Location	SedQual		_		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	oc	OC dw
EPA SI EPA SI	Nearshore south Nearshore south	775 776	DR209-0000 DR210-0000	SD-DR209-0000 SD-DR210-0000	Chrysene Chrysene	60 180	ug/kg ug/kg		5.8 12	mg/kg OC mg/kg OC
Boeing	Nearshore south	894	SD0018	SD-DK210-0000 SD0018	Chrysene	250	ug/kg		25	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Chrysene	150	ug/kg		12	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Chrysene	160	ug/kg		20	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Chrysene	170	ug/kg		14	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Chrysene	120	ug/kg		4.0	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Chrysene	1800	ug/kg		57	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Chrysene	80	ug/kg	J	6.2	mg/kg OC
Boeing	T-117 EAA T-117 EAA	892 893	SD0011 SD0010	SD0011 SD0010	Chrysene	99 190	ug/kg		8.7 16	mg/kg OC
Boeing EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Chrysene Dibenzo(a,h)anthracene	30	ug/kg ug/kg		1.2	mg/kg OC mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Dibenzo(a,h)anthracene	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Dibenzo(a,h)anthracene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Dibenzo(a,h)anthracene	20	ug/kg	U	1.9	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Dibenzo(a,h)anthracene	20	ug/kg		1.4	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Dibenzo(a,h)anthracene	70	ug/kg		7.0	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Dibenzo(a,h)anthracene	37	ug/kg		2.8	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Dibenzo(a,h)anthracene	42	ug/kg		5.1	mg/kg OC
Boeing EPA SI	Nearshore south T-117 EAA	898 772	SD0009 DR206-0000	SD0009 SD-DR206-0000	Dibenzo(a,h)anthracene	33 20	ug/kg		2.8 0.67	mg/kg OC
EPA SI	T-117 EAA	773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	Dibenzo(a,h)anthracene Dibenzo(a,h)anthracene	150	ug/kg ug/kg		4.7	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Dibenzo(a,h)anthracene	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Dibenzo(a,h)anthracene	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Dibenzo(a,h)anthracene	40	ug/kg		3.3	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Dibenzo(ah)anthracene	20	ug/kg		1.1	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Fluoranthene	240	ug/kg		14	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Fluoranthene	460	ug/kg		18	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Fluoranthene	130	ug/kg		5.9	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Fluoranthene	150	ug/kg		7.5	mg/kg OC
EPA SI EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Fluoranthene Fluoranthene	100 300	ug/kg		9.7 21	mg/kg OC
Boeing	Nearshore south Nearshore south	776 894	DR210-0000 SD0018	SD-DR210-0000 SD0018	Fluoranthene	370	ug/kg ug/kg		37	mg/kg OC mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Fluoranthene	240	ug/kg		18	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Fluoranthene	230	ug/kg		28	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Fluoranthene	240	ug/kg		20	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Fluoranthene	280	ug/kg		9.4	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Fluoranthene	4500	ug/kg		140	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Fluoranthene	110	ug/kg	J	8.5	mg/kg OC
Boeing Boeing	T-117 EAA T-117 EAA	892 893	SD0011 SD0010	SD0011 SD0010	Fluoranthene Fluoranthene	160 300	ug/kg ug/kg		14 25	mg/kg OC mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Indeno(1,2,3-cd)pyrene	110	ug/kg		4.3	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Indeno(1,2,3-cd)pyrene	50	ug/kg		2.3	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Indeno(1,2,3-cd)pyrene	50	ug/kg		2.5	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Indeno(1,2,3-cd)pyrene	40	ug/kg		3.9	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Indeno(1,2,3-cd)pyrene	90	ug/kg		6.2	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Indeno(1,2,3-cd)pyrene	160	ug/kg		16	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Indeno(1,2,3-cd)pyrene	81	ug/kg		6.2	mg/kg OC
Boeing Boeing	Nearshore south Nearshore south	897 898	SD0012 SD0009	SD0012 SD0009	Indeno(1,2,3-cd)pyrene Indeno(1,2,3-cd)pyrene	82 98	ug/kg ug/kg		10 8.2	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Indeno(1,2,3-cd)pyrene	80	ug/kg		2.7	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Indeno(1,2,3-cd)pyrene	510	ug/kg		16	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Indeno(1,2,3-cd)pyrene	40	ug/kg	J	3.1	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Indeno(1,2,3-cd)pyrene	50	ug/kg		4.4	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Indeno(1,2,3-cd)pyrene	100	ug/kg		8.3	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Indeno(123-cd)pyrene	100	ug/kg		5.6	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Pyrene	220	ug/kg		12	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Pyrene	340	ug/kg		13	mg/kg OC
EPA SI EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Pyrene Pyrene	110 170	ug/kg		5.0 8.5	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Pyrene	90	ug/kg ug/kg		8.7	mg/kg OC mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Pyrene	250	ug/kg		17	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Pyrene	500	ug/kg		50	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Pyrene	260	ug/kg		20	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Pyrene	240	ug/kg		29	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Pyrene	280	ug/kg		23	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Pyrene	220	ug/kg		7.4	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Pyrene	4200	ug/kg		130	mg/kg OC
EPA SI	T-117 EAA T-117 EAA	774 892	DR208-0000 SD0011	SD-DR208-0000 SD0011	Pyrene Pyrene	130 140	ug/kg	J	10 12	mg/kg OC
			SD0011	SD0011 SD0010	Pyrene	310	ug/kg ug/kg		26	mg/kg OC mg/kg OC
Boeing Boeing	T-117 FAA	843								
Boeing	T-117 EAA Navigation north	893 800			•					
•	T-117 EAA Navigation north Navigation T-117	893 800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	Total HPAH (calc'd) Total HPAH (calc'd)	1230 1870	ug/kg ug/kg		69 73	mg/kg OC mg/kg OC



• •	-	Location	SedQual		•		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	ОС	OC dw
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Total HPAH (calc'd)	780	ug/kg		39	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Total HPAH (calc'd)	480	ug/kg		47	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Total HPAH (calc'd)	1460	ug/kg		101	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Total HPAH (calc'd)	2290	ug/kg		229	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	Total HPAH (calc'd)	1291	ug/kg		99	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	Total HPAH (calc'd)	1268	ug/kg		155	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Total HPAH (calc'd)	1448	ug/kg		121	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	Total HPAH (calc'd)	1180	ug/kg		40	mg/kg OC
EPA SI EPA SI	T-117 EAA T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	Total HPAH (calc'd) Total HPAH (calc'd)	16410 620	ug/kg	J	518 48	mg/kg OC mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD-DR208-0000 SD0011	Total HPAH (calc'd)	774	ug/kg ug/kg	J	68	mg/kg OC
Boeing	T-117 EAA	893	SD0011	SD0011	Total HPAH (calc'd)	1607	ug/kg		134	mg/kg OC
Booking	I-III EAA	000	000010	000010	Semivolatile Organics	1007	ug/kg		134	mg/kg 00
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	1.3-Dichlorobenzene	20	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	1,3-Dichlorobenzene	20	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	1,3-Dichlorobenzene	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	1,3-Dichlorobenzene	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	1,3-Dichlorobenzene	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,3-Dichlorobenzene	3.1	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	1,3-Dichlorobenzene	20	ug/kg	UJ		
Boeing	T-117 EAA T-117 EAA	892	SD0011 SD0010	SD0011	1,3-Dichlorobenzene	20	ug/kg	U		
Boeing		893		SD0010	1,3-Dichlorobenzene	19	ug/kg	U		
EPA SI EPA SI	Navigation north Navigation T-117	800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	2,4,5-Trichlorophenol 2,4,5-Trichlorophenol	200	ug/kg ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	2,4,5-Trichlorophenol	200	ug/kg	UJ		
Boeing	Nearshore south	894	SD0018	SD0018	2,4,5-Trichlorophenol	96	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	2,4,5-Trichlorophenol	98	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	2,4,5-Trichlorophenol	95	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	2,4,5-Trichlorophenol	99	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	2,4,5-Trichlorophenol	200	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	2,4,5-Trichlorophenol	98	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	2,4,5-Trichlorophenol	96	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI EPA SI	Navigation T-117 Nearshore north	784	DR218-0000	SD-DR218-0000	2,4,6-Trichlorophenol 2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI	Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	2,4,6-Trichlorophenol	200	ug/kg ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	2,4,6-Trichlorophenol	200	ug/kg	UJ		
Boeing	Nearshore south	894	SD0018	SD0018	2,4,6-Trichlorophenol	96	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	2,4,6-Trichlorophenol	98	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	2,4,6-Trichlorophenol	95	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	2,4,6-Trichlorophenol	99	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	2,4,6-Trichlorophenol	200	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	2,4,6-Trichlorophenol	98	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	2,4,6-Trichlorophenol	96	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	2,4-Dichlorophenol	60	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	2,4-Dichlorophenol	60	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	2,4-Dichlorophenol	60	ug/kg	U		
EPA SI EPA SI	Nearshore north Nearshore south	793	DR227-0000 DR209-0000	SD-DR227-0000 SD-DR209-0000	2,4-Dichlorophenol 2,4-Dichlorophenol	60	ug/kg	U		
EPA SI	Nearshore south	775 776	DR210-0000	SD-DR209-0000 SD-DR210-0000	2,4-Dichlorophenol	60 60	ug/kg ug/kg	UJ		
Boeing	Nearshore south	894	SD0018	SD-DK210-0000 SD0018	2,4-Dichlorophenol	57	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	2,4-Dichlorophenol	59	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	2,4-Dichlorophenol	57	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	2,4-Dichlorophenol	59	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,4-Dichlorophenol	60	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	2,4-Dichlorophenol	60	ug/kg	U		
LIASI					0.4.00:111	00		UJ		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	2,4-Dichlorophenol	60	ug/kg	UJ		
EPA SI Boeing	T-117 EAA	892	SD0011	SD0011	2,4-Dichlorophenol	59	ug/kg	U		
EPA SI										



- 40 10 0000000		Location	SedQual		5 cm) sealment		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	OC	OC dw
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	2,4-Dimethylphenol	20	ug/kg	U		
EPA SI Boeing	Nearshore south Nearshore south	776 894	DR210-0000 SD0018	SD-DR210-0000 SD0018	2,4-Dimethylphenol 2,4-Dimethylphenol	20 19	ug/kg ug/kg	U		
Boeing	Nearshore south	895	SD0010 SD0019	SD0019	2,4-Dimethylphenol	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	2,4-Dimethylphenol	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	2,4-Dimethylphenol	20	ug/kg	UJ		
Boeing Boeing	T-117 EAA T-117 EAA	892 893	SD0011 SD0010	SD0011 SD0010	2,4-Dimethylphenol 2,4-Dimethylphenol	20 19	ug/kg ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	2,4-Dinitrophenol	200	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	2,4-Dinitrophenol	200	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	2,4-Dinitrophenol	200	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	2,4-Dinitrophenol	200	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	2,4-Dinitrophenol	200	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	2,4-Dinitrophenol	200	ug/kg	UJ		
Boeing Boeing	Nearshore south Nearshore south	894 895	SD0018 SD0019	SD0018 SD0019	2,4-Dinitrophenol 2,4-Dinitrophenol	190 200	ug/kg ug/kg	UJ		
Boeing	Nearshore south	897	SD0019 SD0012	SD0019 SD0012	2,4-Dinitrophenol	190	ug/kg	UJ		
Boeing	Nearshore south	898	SD0009	SD0009	2,4-Dinitrophenol	200	ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,4-Dinitrophenol	200	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	2,4-Dinitrophenol	200	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	2,4-Dinitrophenol	200	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	2,4-Dinitrophenol	200	ug/kg	UJ		
Boeing EPA SI	T-117 EAA	893 800	SD0010 DR234-0000	SD0010 SD-DR234-0000	2,4-Dinitrophenol 2,4-Dinitrotoluene	190 200	ug/kg	UJ		
EPA SI	Navigation north Navigation T-117	784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	2,4-Dinitrotoluene	200	ug/kg ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	2,4-Dinitrotoluene	200	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	2,4-Dinitrotoluene	200	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	2,4-Dinitrotoluene	200	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	2,4-Dinitrotoluene	200	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	2,4-Dinitrotoluene	96	ug/kg	U		
Boeing Boeing	Nearshore south Nearshore south	895 897	SD0019 SD0012	SD0019 SD0012	2,4-Dinitrotoluene 2,4-Dinitrotoluene	98 95	ug/kg ug/kg	U		
Boeing	Nearshore south	898	SD0012 SD0009	SD0012 SD0009	2,4-Dinitrotoluene	99	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,4-Dinitrotoluene	200	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	2,4-Dinitrotoluene	200	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	2,4-Dinitrotoluene	200	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	2,4-Dinitrotoluene	98	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	2,4-Dinitrotoluene	96	ug/kg	U		
EPA SI EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	2,6-Dinitrotoluene 2,6-Dinitrotoluene	200	ug/kg	U		
EPA SI	Navigation T-117 Nearshore north	784 771	DR218-0000 DR205-0000	SD-DR218-0000 SD-DR205-0000	2,6-Dinitrotoluene	200	ug/kg ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	2.6-Dinitrotoluene	200	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	2,6-Dinitrotoluene	200	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	2,6-Dinitrotoluene	200	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	2,6-Dinitrotoluene	96	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	2,6-Dinitrotoluene	98	ug/kg	U		
Boeing	Nearshore south	897	SD0012 SD0009	SD0012 SD0009	2,6-Dinitrotoluene	95	ug/kg	U		
Boeing EPA SI	Nearshore south T-117 EAA	898 772	DR206-0000	SD-DR206-0000	2,6-Dinitrotoluene 2,6-Dinitrotoluene	99 200	ug/kg ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	2,6-Dinitrotoluene	200	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	2,6-Dinitrotoluene	200	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	2,6-Dinitrotoluene	98	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	2,6-Dinitrotoluene	96	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	2-Chloronaphthalene	20	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	2-Chloronaphthalene	20	ug/kg	U		
EPA SI EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	2-Chloronaphthalene 2-Chloronaphthalene	20 20	ug/kg ug/kg	U		
EPA SI	Nearshore south	775	DR227-0000 DR209-0000	SD-DR227-0000 SD-DR209-0000	2-Chloronaphthalene	20	ug/kg ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	2-Chloronaphthalene	20	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	2-Chloronaphthalene	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	2-Chloronaphthalene	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	2-Chloronaphthalene	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	2-Chloronaphthalene	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2-Chloronaphthalene	20	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	2-Chloronaphthalene 2-Chloronaphthalene	20 20	ug/kg ug/kg	U		
Boeing	T-117 EAA	892	SD0011	SD-DR208-0000 SD0011	2-Chloronaphthalene	20	ug/kg ug/kg	U		
Boeing	T-117 EAA	893	SD0011	SD0011	2-Chloronaphthalene	19	ug/kg	U		
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Event	Region	Location Number	SedQual Sample ID	Sample ID	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	2-Chlorophenol	20	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	2-Chlorophenol	20	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	2-Chlorophenol	20	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	2-Chlorophenol	20	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	2-Chlorophenol	20	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	2-Chlorophenol	20	ug/kg	UJ		
Boeing	Nearshore south	894	SD0018	SD0018	2-Chlorophenol	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	2-Chlorophenol	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	2-Chlorophenol	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	2-Chlorophenol	20	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	2-Chlorophenol	20	ug/kg	U		
EPA SI	T-117 EAA	774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	2-Chlorophenol 2-Chlorophenol	20	ug/kg ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	2-Chlorophenol	20	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	2-Chlorophenol	19	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	2-Fluorobiphenyl	64	%			
Boeing	Nearshore south	895	SD0019	SD0019	2-Fluorobiphenyl	59	%			
Boeing	Nearshore south	897	SD0012	SD0012	2-Fluorobiphenyl	77	%			
Boeing	Nearshore south	898	SD0009	SD0009	2-Fluorobiphenyl	67	%			
Boeing	T-117 EAA	892	SD0011	SD0011	2-Fluorobiphenyl	66	%			
Boeing	T-117 EAA	893	SD0010	SD0010	2-Fluorobiphenyl	65	%			
Boeing	Nearshore south	894	SD0018	SD0018	2-Fluorophenol	44	%			
Boeing	Nearshore south	895	SD0019	SD0019	2-Fluorophenol	41	%			
Boeing	Nearshore south	897	SD0012	SD0012	2-Fluorophenol	74	%			
Boeing	Nearshore south	898	SD0009	SD0009	2-Fluorophenol	62	%			
Boeing	T-117 EAA	892	SD0011	SD0011	2-Fluorophenol	60	%			
Boeing	T-117 EAA	893	SD0010	SD0010	2-Fluorophenol	60	%			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	2-Methylphenol	20	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	2-Methylphenol	20	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	2-Methylphenol	20	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	2-Methylphenol	20	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	2-Methylphenol	20	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	2-Methylphenol	20	ug/kg	UJ		
Boeing	Nearshore south	894	SD0018	SD0018	2-Methylphenol	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	2-Methylphenol	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	2-Methylphenol	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	2-Methylphenol	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2-Methylphenol	20	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	2-Methylphenol 2-Methylphenol	20	ug/kg	U		
Boeing	T-117 EAA	892	SD0011	SD-DR206-0000 SD0011	2-Methylphenol	20	ug/kg ug/kg	U		
Boeing	T-117 EAA	893	SD0011	SD0011	2-Methylphenol	19	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	2-Nitroaniline	100	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	2-Nitroaniline	100	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	2-Nitroaniline	100	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	2-Nitroaniline	100	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	2-Nitroaniline	100	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	2-Nitroaniline	100	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	2-Nitroaniline	96	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	2-Nitroaniline	98	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	2-Nitroaniline	95	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	2-Nitroaniline	99	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2-Nitroaniline	100	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	2-Nitroaniline	100	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	2-Nitroaniline	100	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	2-Nitroaniline	98	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	2-Nitroaniline	96	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	2-Nitrophenol	100	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	2-Nitrophenol	100	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	2-Nitrophenol	100	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	2-Nitrophenol	100	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000 DR210-0000	SD-DR209-0000 SD-DR210-0000	2-Nitrophenol 2-Nitrophenol	100	ug/kg	U		
EPA SI	Nearshore south	776			•	100	ug/kg	UJ		
Boeing	Nearshore south	894 895	SD0018 SD0019	SD0018 SD0019	2-Nitrophenol 2-Nitrophenol	96 98	ug/kg	U		
Boeing Boeing	Nearshore south Nearshore south	895	SD0019 SD0012	SD0019 SD0012	2-Nitrophenol	95	ug/kg ug/kg	U		
Boeing	Nearshore south	898	SD0012 SD0009	SD0012 SD0009	2-Nitrophenol	99	ug/kg ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2-Nitrophenol	100	ug/kg ug/kg	U		
EPA SI	T-117 EAA	773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	2-Nitrophenol	100		U		
EPA SI	T-117 EAA	774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	2-Nitrophenol	100	ug/kg ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	2-Nitrophenol	98	ug/kg	U		
Boeing	T-117 EAA	893	SD0011	SD0011	2-Nitrophenol	96	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	3 and 4-Methylphenol Coelution	20	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR234-0000 SD-DR218-0000	3 and 4-Methylphenol Coelution	20	ug/kg	U		



		Location	SedQual	<u> </u>	·15 cm) sediment		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	ОС	OC dw
EPA SI EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	3 and 4-Methylphenol Coelution 3 and 4-Methylphenol Coelution	20	ug/kg ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR227-0000 SD-DR209-0000	3 and 4-Methylphenol Coelution	20	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	3 and 4-Methylphenol Coelution	20	ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	3 and 4-Methylphenol Coelution	20	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	3 and 4-Methylphenol Coelution	20	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	3 and 4-Methylphenol Coelution	20	ug/kg	UJ		
EPA SI	Navigation north Navigation T-117	800	DR234-0000	SD-DR234-0000	3,3'-Dichlorobenzidine 3.3'-Dichlorobenzidine	200	ug/kg	U		
EPA SI EPA SI	Nearshore north	784 771	DR218-0000 DR205-0000	SD-DR218-0000 SD-DR205-0000	3,3'-Dichlorobenzidine	200	ug/kg ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	3.3'-Dichlorobenzidine	200	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	3,3'-Dichlorobenzidine	200	ug/kg	Ü		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	3,3'-Dichlorobenzidine	200	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	3,3'-Dichlorobenzidine	96	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	3,3'-Dichlorobenzidine	98	ug/kg	U		
Boeing	Nearshore south	897 898	SD0012 SD0009	SD0012 SD0009	3,3'-Dichlorobenzidine 3,3'-Dichlorobenzidine	95 99	ug/kg	U		
Boeing EPA SI	Nearshore south T-117 EAA	772	DR206-0000	SD-DR206-0000	3,3'-Dichlorobenzidine	200	ug/kg ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	3,3'-Dichlorobenzidine	200	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	3,3'-Dichlorobenzidine	200	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	3,3'-Dichlorobenzidine	98	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	3,3'-Dichlorobenzidine	96	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	3-Nitroaniline	200	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	3-Nitroaniline	200	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	3-Nitroaniline	200	ug/kg	U		
EPA SI EPA SI	Nearshore north Nearshore south	793 775	DR227-0000 DR209-0000	SD-DR227-0000 SD-DR209-0000	3-Nitroaniline 3-Nitroaniline	200	ug/kg ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR209-0000 SD-DR210-0000	3-Nitroaniline	200	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	3-Nitroaniline	110	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	3-Nitroaniline	120	ug/kg	Ü		
Boeing	Nearshore south	897	SD0012	SD0012	3-Nitroaniline	110	ug/kg	U		-
Boeing	Nearshore south	898	SD0009	SD0009	3-Nitroaniline	120	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	3-Nitroaniline	200	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	3-Nitroaniline	200	ug/kg	U		
EPA SI	T-117 EAA T-117 EAA	774 892	DR208-0000 SD0011	SD-DR208-0000 SD0011	3-Nitroaniline 3-Nitroaniline	200 120	ug/kg	UJ		
Boeing Boeing	T-117 EAA	893	SD0011	SD0011 SD0010	3-Nitroaniline	110	ug/kg ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	4,6-Dinitro-o-cresol	200	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	4,6-Dinitro-o-cresol	190	ug/kg	UJ		
Boeing	Nearshore south	895	SD0019	SD0019	4,6-Dinitro-o-cresol	200	ug/kg	UJ		
Boeing Boeing	Nearshore south Nearshore south	897 898	SD0012 SD0009	SD0012 SD0009	4,6-Dinitro-o-cresol 4,6-Dinitro-o-cresol	190 200	ug/kg ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	4,6-Dinitro-o-cresol	200	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	4,6-Dinitro-o-cresol	200	ug/kg	UJ		
Boeing	T-117 EAA	893	SD0010	SD0010	4,6-Dinitro-o-cresol	190	ug/kg	UJ		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	4-Bromophenyl phenyl ether 4-Bromophenyl phenyl ether	40 40	ug/kg ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR227-0000 SD-DR209-0000	4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	4-Bromophenyl phenyl ether	40	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	4-Bromophenyl phenyl ether	19	ug/kg	U		-
Boeing	Nearshore south	895	SD0019	SD0019	4-Bromophenyl phenyl ether	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	4-Bromophenyl phenyl ether	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	4-Bromophenyl phenyl ether	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	4-Bromophenyl phenyl ether 4-Bromophenyl phenyl ether	40 40	ug/kg ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD-DR208-0000 SD0011	4-Bromophenyl phenyl ether	20	ug/kg ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0011	4-Bromophenyl phenyl ether	19	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	4-Chloro-3-methylphenol	40	ug/kg	Ü		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI Boeing	Nearshore south	776	DR210-0000	SD-DR210-0000	4-Chloro-3-methylphenol	40	ug/kg	UJ		
	Nearshore south	894	SD0018	SD0018	4-Chloro-3-methylphenol	38	ug/kg	U	l l	



Event	Region	Location Number	SedQual Sample ID	Sample ID	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
Boeing	Nearshore south	895	SD0019	SD0019	4-Chloro-3-methylphenol	39	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	4-Chloro-3-methylphenol	38	ug/kg	U		
Boeing	Nearshore south T-117 EAA	898	SD0009	SD0009	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI EPA SI	T-117 EAA	772 773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	4-Chloro-3-methylphenol 4-Chloro-3-methylphenol	40	ug/kg ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	4-Chloro-3-methylphenol	40	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	4-Chloro-3-methylphenol	39	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	4-Chloro-3-methylphenol	38	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	4-Chloroaniline	60	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	4-Chloroaniline	60	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	4-Chloroaniline	60	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	4-Chloroaniline	60	ug/kg	U		1
EPA SI EPA SI	Nearshore south Nearshore south	775 776	DR209-0000 DR210-0000	SD-DR209-0000 SD-DR210-0000	4-Chloroaniline 4-Chloroaniline	60 60	ug/kg ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	4-Chloroaniline	57	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	4-Chloroaniline	59	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	4-Chloroaniline	57	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	4-Chloroaniline	59	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	4-Chloroaniline	60	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	4-Chloroaniline	60	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	4-Chloroaniline	60	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	4-Chloroaniline	59	ug/kg	U		
Boeing	T-117 EAA	893	SD0010 DR234-0000	SD0010	4-Chloroaniline	57 20	ug/kg	U		
EPA SI EPA SI	Navigation north Navigation T-117	800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	4-Chlorophenyl phenyl ether 4-Chlorophenyl phenyl ether	20	ug/kg ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	4-Chlorophenyl phenyl ether	20	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	4-Chlorophenyl phenyl ether	20	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	4-Chlorophenyl phenyl ether	20	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	4-Chlorophenyl phenyl ether	20	ug/kg	U		-
Boeing	Nearshore south	894	SD0018	SD0018	4-Chlorophenyl phenyl ether	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	4-Chlorophenyl phenyl ether	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	4-Chlorophenyl phenyl ether	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	4-Chlorophenyl phenyl ether	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000 DR207-0000	SD-DR206-0000	4-Chlorophenyl phenyl other	20	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	4-Chlorophenyl phenyl ether 4-Chlorophenyl phenyl ether	20	ug/kg ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	4-Chlorophenyl phenyl ether	20	ug/kg	U		1
Boeing	T-117 EAA	893	SD0010	SD0010	4-Chlorophenyl phenyl ether	19	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	4-Methylphenol	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	4-Methylphenol	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	4-Methylphenol	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	4-Methylphenol	20	ug/kg	U		
Boeing	T-117 EAA	892	SD0011	SD0011	4-Methylphenol	20	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	4-Methylphenol	19	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	4-Nitroaniline	100	ug/kg	U		
EPA SI EPA SI	Navigation T-117 Nearshore north	784 771	DR218-0000 DR205-0000	SD-DR218-0000 SD-DR205-0000	4-Nitroaniline 4-Nitroaniline	100	ug/kg ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	4-Nitroaniline	100	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	4-Nitroaniline	100	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	4-Nitroaniline	100	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	4-Nitroaniline	96	ug/kg	UJ		
Boeing	Nearshore south	895	SD0019	SD0019	4-Nitroaniline	98	ug/kg	UJ		
Boeing	Nearshore south	897	SD0012	SD0012	4-Nitroaniline	95	ug/kg	UJ		
Boeing	Nearshore south	898	SD0009	SD0009	4-Nitroaniline	99	ug/kg	UJ		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	4-Nitroaniline	100	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	773	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	4-Nitroaniline 4-Nitroaniline	100	ug/kg ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD-DR206-0000 SD0011	4-Nitroaniline	98	ug/kg ug/kg	UJ		
Boeing	T-117 EAA	893	SD0011	SD0011	4-Nitroaniline	96	ug/kg	UJ		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	4-Nitrophenol	100	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	4-Nitrophenol	100	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	4-Nitrophenol	100	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	4-Nitrophenol	100	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	4-Nitrophenol	100	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	4-Nitrophenol	100	ug/kg	UJ		
Boeing	Nearshore south	894	SD0018	SD0018	4-Nitrophenol	96	ug/kg	UJ		
Boeing	Nearshore south Nearshore south	895 897	SD0019 SD0012	SD0019 SD0012	4-Nitrophenol 4-Nitrophenol	98 95	ug/kg	UJ		
Boeing Boeing	Nearshore south	898	SD0012 SD0009	SD0012 SD0009	4-Nitrophenol	95	ug/kg ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	4-Nitrophenol	100	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	4-Nitrophenol	100	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	4-Nitrophenol	100	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	4-Nitrophenol	98	ug/kg	UJ		
Boeing	T-117 EAA	893	SD0010	SD0010	4-Nitrophenol	96	ug/kg	UJ		



Event	Region	Location Number	SedQual Sample ID	Sample ID	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Benzoic acid	200	ug/kg	U	00	OC GW
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Benzoic acid	200	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Benzoic acid	200	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Benzoic acid	200	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Benzoic acid	200	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Benzoic acid	200	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	Benzoic acid	190	ug/kg	UJ		
Boeing	Nearshore south	895	SD0019	SD0019	Benzoic acid	200	ug/kg	UJ		
Boeing	Nearshore south	897	SD0012	SD0012	Benzoic acid	190	ug/kg	UJ		
Boeing	Nearshore south	898	SD0009	SD0009	Benzoic acid	200	ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Benzoic acid	200	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Benzoic acid	200	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Benzoic acid	200	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	Benzoic acid	200	ug/kg	UJ		
Boeing	T-117 EAA	893	SD0010	SD0010	Benzoic acid	190	ug/kg	UJ		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Benzyl alcohol	50	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Benzyl alcohol	50	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Benzyl alcohol	50	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Benzyl alcohol	50	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Benzyl alcohol	50	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Benzyl alcohol	50	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	Benzyl alcohol	19	ug/kg	UJ		
Boeing	Nearshore south	895	SD0019	SD0019	Benzyl alcohol	20	ug/kg	UJ		
Boeing	Nearshore south	897	SD0012	SD0012	Benzyl alcohol	19	ug/kg	UJ		
Boeing	Nearshore south	898	SD0009	SD0009	Benzyl alcohol	20	ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Benzyl alcohol	50	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Benzyl alcohol	50	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Benzyl alcohol	50	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	Benzyl alcohol	20	ug/kg	UJ		
Boeing	T-117 EAA	893	SD0010	SD0010	Benzyl alcohol	19	ug/kg	UJ		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	bis(2-chloroethoxy)methane	40	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	bis(2-chloroethoxy)methane	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	bis(2-chloroethoxy)methane	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	bis(2-chloroethoxy)methane	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	bis(2-chloroethoxy)methane	20 40	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	T-117 EAA	774	DR207-0000 DR208-0000		bis(2-chloroethoxy)methane	40	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD-DR208-0000 SD0011	bis(2-chloroethoxy)methane bis(2-chloroethoxy)methane	20	ug/kg ug/kg	U		
Boeing	T-117 EAA	893	SD0011	SD0011 SD0010	bis(2-chloroethoxy)methane	19	ug/kg ug/kg	U		
-		800		SD-DR234-0000	• • • • • • • • • • • • • • • • • • • •	40		U		
EPA SI	Navigation north		DR234-0000 DR218-0000		bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI EPA SI	Navigation T-117 Nearshore north	784 771	DR218-0000 DR205-0000	SD-DR218-0000	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	bis(2-chloroethyl)ether bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	bis(2-chloroethyl)ether	40	ug/kg ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	bis(2-chloroethyl)ether	38	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	bis(2-chloroethyl)ether	39	ug/kg	U		
Boeing	Nearshore south	897	SD0019	SD0019	bis(2-chloroethyl)ether	38	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	bis(2-chloroethyl)ether	40	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	bis(2-chloroethyl)ether	39	ug/kg	U		
Boeing	T-117 EAA	893	SD0011	SD0011	bis(2-chloroethyl)ether	38	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	bis(2-chloroisopropyl)ether	40	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	bis(2-chloroisopropyl)ether	40	ug/kg	U		
	Nearshore north	771	DR205-0000	SD-DR205-0000	bis(2-chloroisopropyl)ether	40	ug/kg	U		
	Nearshore north	793	DR227-0000	SD-DR227-0000	bis(2-chloroisopropyl)ether	40	ug/kg	U		
EPA SI	inearshore north		DR209-0000	SD-DR209-0000	bis(2-chloroisopropyl)ether	40	ug/kg	U		
EPA SI EPA SI		775						U		
EPA SI EPA SI EPA SI	Nearshore south	775 776		SD-DR210-0000	bis(2-chioroisobroby) letner	40	ua/ka	U		
EPA SI EPA SI EPA SI EPA SI	Nearshore south Nearshore south	776	DR210-0000	SD-DR210-0000 SD-DR206-0000	bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether	40 40	ug/kg ug/ka			
EPA SI EPA SI EPA SI EPA SI EPA SI	Nearshore south Nearshore south T-117 EAA	776 772	DR210-0000 DR206-0000	SD-DR206-0000	bis(2-chloroisopropyl)ether	40	ug/kg	U		
EPA SI EPA SI EPA SI EPA SI EPA SI EPA SI	Nearshore south Nearshore south T-117 EAA T-117 EAA	776 772 773	DR210-0000 DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether	40 40	ug/kg ug/kg	U		
EPA SI	Nearshore south Nearshore south T-117 EAA T-117 EAA T-117 EAA	776 772 773 774	DR210-0000 DR206-0000 DR207-0000 DR208-0000	SD-DR206-0000 SD-DR207-0000 SD-DR208-0000	bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether	40 40 40	ug/kg ug/kg ug/kg	U	20	ma/ka OC
EPA SI Plant 2 RFI-2b	Nearshore south Nearshore south T-117 EAA T-117 EAA T-117 EAA Navigation north	776 772 773 774 496	DR210-0000 DR206-0000 DR207-0000 DR208-0000 DUW81-0000	SD-DR206-0000 SD-DR207-0000 SD-DR208-0000 SD2B-DUW81-0000	bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate	40 40 40 385	ug/kg ug/kg ug/kg ug/kg	U U U	20	mg/kg OC
EPA SI Plant 2 RFI-2b EPA SI	Nearshore south Nearshore south T-117 EAA T-117 EAA T-117 EAA Navigation north Navigation north	776 772 773 774 496 800	DR210-0000 DR206-0000 DR207-0000 DR208-0000 DUW81-0000 DR234-0000	SD-DR206-0000 SD-DR207-0000 SD-DR208-0000 SD2B-DUW81-0000 SD-DR234-0000	bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate Bis(2-ethylhexyl)phthalate	40 40 40 385 240	ug/kg ug/kg ug/kg ug/kg ug/kg	U	14	mg/kg OC
EPA SI	Nearshore south Nearshore south T-117 EAA T-117 EAA T-117 EAA Navigation north	776 772 773 774 496	DR210-0000 DR206-0000 DR207-0000 DR208-0000 DUW81-0000	SD-DR206-0000 SD-DR207-0000 SD-DR208-0000 SD2B-DUW81-0000	bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether bis(2-chloroisopropyl)ether Bis(2-ethylhexyl)phthalate	40 40 40 385	ug/kg ug/kg ug/kg ug/kg	U U U		



Page Mary March March			Location	SedQual				Unit		Value	Unit
FBA 58 T-17 EAA				Sample ID					Q	OC	OC dw
Search Nearnfore south Sept											
Bening											
Seeing Neambroe south B97 S00012 S00012 S000012 S000012 S000012 S00000 S00000 S000000 S000000 S0000000 S000000 S0000000 S0000000 S00000000									J		
Source Source Source Source Source Source Subject						. , , , , , ,					
EAR S T-11* EAA 773 RR070000 SO-PRES 00000 stage-depthysiosylphenhated 100 up/5q 3 3 mykg OL Soeing 7-11* EAA A82 300011 SD0011 BILD ethylipsylphenhated 120 up/5q J 11 mykg OL Soeing 7-11* EAA A82 300011 SD0011 BILD ethylipsylphenhated 120 up/5q J 11 mykg OL Soeing Annahitore such 865 SD0019 SECTION SECTION SECTION American Section 120 up/5q U U L											
ERA SI			772	DR206-0000	SD-DR206-0000	Bis(2-ethylhexyl)phthalate	280	ug/kg		9.4	mg/kg OC
Seeing						, , , , , , , , , , , , , , , , , , , ,					
Seming T-117 EAA 939 S00010 S00010 S00010 S00-Part S00010 S00010 S00010 S00-Part S00010 S00010 S00010 S00-Part S00010 S00010 S00010 S00010 S00010 S00010 S00-Part S00010											
Seeing									J		
Benning Neurshore south 685 S00019 S00019 So-chronizopropt either 20 ug/kg U So-chronizopropt either 19 ug/kg U So-chronizopropt either 19 ug/kg U So-chronizopropt either 20 ug/kg U So-chronizopro						, , , , , , , , , , , , , , , , , , , ,			U	17	ilig/kg OC
Seeing Nearshore south 887 S00012 S00012 S00019 S00000 S000000 S0000000 S0000000 S00000000											
Beeing		Nearshore south			SD0012				U		
Boeing T-117 EAA 883 8500010 B00010 in-circle recoppropriether 19 up/kg U Explain Pair Pair Pair Pair Pair Pair Pair Pair	Boeing	Nearshore south	898	SD0009	SD0009	bis-chloroisopropyl ether	20	ug/kg	U		
Plant 2 RF1-Zu Navigation north 486											
EPA SI Nivergation north 600 DR234-0000 BD-DR234-0000 Buylb brancy pithhisalise 20 ugfkg 1 1.1 mg/kg QC EPA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Buylb brancy pithhisalise 20 ugfkg 1 0.90 mg/kg QC EPA SI Nearshore north 775 DR205-0000 SD-DR205-0000 Buylb brancy pithhisalise 20 ugfkg 1 0.90 mg/kg QC EPA SI Nearshore south 894 SD0018 SD0018 Buylb brancy pithhisalise 40 ugfkg 1 1.9 mg/kg QC Boeing Nearshore south 894 SD0018 SD0019 Buylb brancy pithhisalise 40 ugfkg J 1.9 mg/kg QC Boeing Nearshore south 897 SD00192 SD0019 Buylb brancy pithhisalise 20 ugfkg J 3.7 mg/kg QC EPA SI T-17 EAA 772 DRXD560000 SD0019 Buylb parcy pithhisalise 20 ugfkg									_		
EPA SI Navigation 7117 784 DR218-0000 SD-DR218-0000 Bulb benzy pithrisatise 30 ugkg U. 9,0g U. 1,0g U. 9,0g U. 1,0g U.							+				
ERA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Buly barncyl prihibatise 20 ug/kg U 0.90 mg/kg CE EPA SI Nearshore south 775 DR209-0000 SD-DR209-0000 Buly benzyl prihibatise 20 ug/kg U 1.9 mg/kg U 1.8 mg/kg U 1.8 mg/kg U 1.8 mg/kg U 1.8 mg/kg U 1.9 mg/kg U 2.0		•							U		
EPA SI Nearshore north 793 DR227-0000 Burth tenzyl phthalate 20 upkg 1 0 mpkg OC EPA SI Nearshore south 775 DR290-0000 SD-DR210-0000 Burth tenzyl phthalate 40 uykg 2.8 mykg OC Boeling Navarhore south 894 S0018 Buoth tenzyl phthalate 40 uykg 2.8 mykg OC Boeling Navarhore south 895 S00019 S00010 Burth tenzyl phthalate 23 uykg J 1.8 mykg OC Boeling Nearshore south 898 S000012 S00012 Burth tenzyl phthalate 26 uykg J 3.7 mykg OC EPA SI T-17 EAA 772 DR206-000 SU-DR207-0000 Burth tenzyl phthalate 26 uykg J 3.2 mykg OC EPA SI T-17 EAA 773 DR207-0000 SU-DR207-0000 Burth tenzyl phthalate 20 uykg U 0.63 mykg OC EPA SI T-17 EAA									U		
EPA SI Neambrore south 775 DR209-0000 Sb-DR209-0000 Butyl benzyl phthalate 420 u.g/kg U 1,9 mg/kg oC EPA SI Noambrore south 894 SD0018 SD0019 Butyl benzyl phthalate 19 u.g/kg U 1,9 mg/kg oC Boeing Naambrore south 895 SD0019 SD0019 Butyl benzyl phthalate 23 u.g/kg J 1,7 Male mylkg oC Boeing Naambrore south 898 SD0001 SD0012 Butyl benzyl phthalate 26 u.g/kg J 3,7 mg/kg oC EPA SI T-117 EAA 772 DR206-0000 SD-DR206-0000 Butyl benzyl phthalate 40 u.g/kg U.g/kg U.g/kg 2.2 mg/kg oC EPA SI T-117 EAA 774 DR206-0000 SD-DR206-0000 Butyl benzyl phthalate 20 u.g/kg											
Boeing Nearshore south 894 S00018 S00019 Butty tenzy phthalate 21 yufkg U 1.9 mg/kg OC Boeing Nearshore south 895 S00012 S00012 Butty tenzy phthalate 23 yufkg J 3.7 mg/kg OC EPA SI T-117 EAA 772 DR206-0000 Buty tenzy phthalate 26 yufkg J 3.7 mg/kg OC EPA SI T-117 EAA 772 DR206-0000 SD-07207-0000 Buty tenzy phthalate 40 yufkg J 3.7 mg/kg OC EPA SI T-117 EAA 774 DR206-0000 SD-07207-0000 Buty tenzy phthalate 20 yufkg U 1.6 mg/kg OC EPA SI Navigation north 800 DR234-0000 SD-07236-0000 Buty tenzy phthalate 20 yufkg U 1.6 mg/kg OC EPA SI Navigation north 800 DR234-0000 SD-07234-0000 Carbace 20 yufkg U wg/kg U V	EPA SI	Nearshore south					20		U	1.9	
Boeing Nearshore south	EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Butyl benzyl phthalate	40	ug/kg		2.8	mg/kg OC
Beering Nearshore south 697 SD0012 SD0012 Surly hearyly phthalate 30 uykg J 3.7 mg/kg OC											
Boeing Nearshore south 988 SD0009 Butyl benzyl phthalate 42 uykg J 22 mykg OC EPA SI T-117 EAA 772 DR200000 SD-DR20-0000 Butyl benzyl phthalate 20 uykg U 0.63 mykg OC U 0.63 J 1.6 mykg OC U 0.63 J 1.6 mykg OC U 0.64						· · · ·					
EPA SI T-117 EAA 772 DR200-0000 SD-PR20F-0000 Bury berxyl phthalatre 40 ug/kg 1 1.3 mg/kg CEPA SI T-117 EAA 774 DR207-0000 SD-PR20F-0000 Bury berxyl phthalatre 20 ug/kg U 0.53 mg/kg U 0.53 mg/kg U 1.6 mg/kg U 1.9 Mg/kg U <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>											
EPA SI T-117 EAA 773 DR207-0000 Bury bernyd phthalate 20 ug/kg U 0.63 mg/kg OC EPA SI T-117 EAA 892 SD0011 SD0011 Bury bernyd phthalate 20 ug/kg J 1.8 mg/kg OC Beeing T-117 EAA 893 SD0011 Bury bernyd phthalate 20 ug/kg J 1.8 mg/kg OC EPA SI Navigation north 800 DR244-0000 SD-DR245-0000 Carbazole 20 ug/kg U L FPA SI Navigation north 870 DR248-0000 SD-DR245-0000 Carbazole 20 ug/kg U L FPA SI Navigation north 771 DR260-0000 SD-DR260-0000 Carbazole 20 ug/kg U L FPA SI Navigation north 771 DR270-0000 SD-DR270-0000 Carbazole 20 ug/kg U L FPA SI Navigation north 775 DR270-0000 SD-DR270-0000 Carbazole 20 ug/kg U									J		
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		Nearshore south	898	SD0009	SD0009	Diethyl phthalate	20		U	1.7	



		Location	SedQual				Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	ОС	OC dw
EPA SI EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Diethyl phthalate	20	ug/kg	U	0.67	mg/kg OC
EPA SI	T-117 EAA T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	Diethyl phthalate Diethyl phthalate	40 200	ug/kg	UJ	1.3 16	mg/kg OC mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD-DR200-0000 SD0011	Diethyl phthalate	200	ug/kg ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0011	Diethyl phthalate	19	ug/kg	U	1.6	mg/kg OC
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Dimethyl phthalate	120	ug/kg	U	6.2	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Dimethyl phthalate	20	ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Dimethyl phthalate	20	ug/kg	U	0.78	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Dimethyl phthalate	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Dimethyl phthalate	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Dimethyl phthalate	20	ug/kg	U	1.9	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Dimethyl phthalate	30	ug/kg		2.1	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	Dimethyl phthalate	19	ug/kg	U	1.9	mg/kg OC
Boeing	Nearshore south	895 897	SD0019 SD0012	SD0019 SD0012	Dimethyl phthalate	20 19	ug/kg	U	1.5 2.3	mg/kg OC
Boeing Boeing	Nearshore south Nearshore south	898	SD0012 SD0009	SD0012 SD0009	Dimethyl phthalate Dimethyl phthalate	22	ug/kg ug/kg	U	1.8	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Dimethyl phthalate	20	ug/kg		0.67	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Dimethyl phthalate	40	ug/kg		1.3	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Dimethyl phthalate	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Dimethyl phthalate	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Dimethyl phthalate	19	ug/kg	U	1.6	mg/kg OC
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Di-n-butyl phthalate	120	ug/kg	U	6.2	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Di-n-butyl phthalate	20	ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Di-n-butyl phthalate	20	ug/kg	U	0.78	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Di-n-butyl phthalate	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Di-n-butyl phthalate	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Di-n-butyl phthalate	20	ug/kg	U	1.9	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Di-n-butyl phthalate	20	ug/kg	U	1.4	mg/kg OC
Boeing	Nearshore south	894 895	SD0018 SD0019	SD0018 SD0019	Di-n-butyl phthalate	19 20	ug/kg	U	1.9 1.5	mg/kg OC
Boeing Boeing	Nearshore south Nearshore south	897	SD0019 SD0012	SD0019 SD0012	Di-n-butyl phthalate Di-n-butyl phthalate	19	ug/kg	U	2.3	mg/kg OC mg/kg OC
Boeing	Nearshore south	898	SD0012 SD0009	SD0012 SD0009	Di-n-butyl phthalate	20	ug/kg ug/kg	U	1.7	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Di-n-butyl phthalate	20	ug/kg	U	0.67	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Di-n-butyl phthalate	20	ug/kg	U	0.63	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Di-n-butyl phthalate	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Di-n-butyl phthalate	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Di-n-butyl phthalate	19	ug/kg	U	1.6	mg/kg OC
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Di-n-octyl phthalate	120	ug/kg	U	6.2	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Di-n-octyl phthalate	20	ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Di-n-octyl phthalate	20	ug/kg	U	0.78	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Di-n-octyl phthalate	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Di-n-octyl phthalate	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Di-n-octyl phthalate	20	ug/kg	U	1.9	mg/kg OC
EPA SI Boeing	Nearshore south	776 894	DR210-0000 SD0018	SD-DR210-0000 SD0018	Di-n-octyl phthalate Di-n-octyl phthalate	20 19	ug/kg	U	1.4 1.9	mg/kg OC
Boeing	Nearshore south Nearshore south	895	SD0018	SD0018 SD0019	Di-n-octyl phthalate	20	ug/kg ug/kg	U	1.5	mg/kg OC mg/kg OC
Boeing	Nearshore south	897	SD0019	SD0019 SD0012	Di-n-octyl phthalate	19	ug/kg	U	2.3	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Di-n-octyl phthalate	20	ug/kg	U	1.7	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Di-n-octyl phthalate	20	ug/kg	U	0.67	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Di-n-octyl phthalate	20	ug/kg	U	0.63	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Di-n-octyl phthalate	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Di-n-octyl phthalate	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Di-n-octyl phthalate	19	ug/kg	U	1.6	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Hexachlorobenzene	20	ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Hexachlorobenzene	20	ug/kg	U	0.78	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Hexachlorobenzene	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Hexachlorobenzene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Hexachlorobenzene	20	ug/kg	U	1.9	mg/kg OC
EPA SI	Nearshore south	776 894	DR210-0000 SD0018	SD-DR210-0000	Hexachlorobenzene	0.40	ug/kg	U	1.4 0.040	mg/kg OC mg/kg OC
Boeing Boeing	Nearshore south Nearshore south	895	SD0018 SD0019	SD0018 SD0019	Hexachlorobenzene Hexachlorobenzene	9.8	ug/kg	J	0.040	mg/kg OC
Boeing	Nearshore south	897	SD0019	SD0019 SD0012	Hexachlorobenzene	0.90	ug/kg ug/kg	U	0.73	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	Hexachlorobenzene	0.80	ug/kg	J	0.067	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Hexachlorobenzene	20	ug/kg	U	0.67	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Hexachlorobenzene	20	ug/kg	U	0.63	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Hexachlorobenzene	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Hexachlorobenzene	1.0	ug/kg	U	0.088	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Hexachlorobenzene	1.5	ug/kg		0.13	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Hexachlorobutadiene	20	ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Hexachlorobutadiene	20	ug/kg	U	0.78	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Hexachlorobutadiene	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Hexachlorobutadiene	20	ug/kg	U	1.0	mg/kg OC
	Nearshore south	775	DR209-0000	SD-DR209-0000	Hexachlorobutadiene	20	ug/kg	U	1.9	mg/kg OC
EPA SI EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Hexachlorobutadiene	20	ug/kg	U	1.4	mg/kg OC



Event	Region	Location Number	SedQual Sample ID	Sample ID	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
Boeing	Nearshore south	894	SD0018	SD0018	Hexachlorobutadiene	19	ug/kg	U	1.9	mg/kg OC
Boeing	Nearshore south Nearshore south	895 897	SD0019 SD0012	SD0019 SD0012	Hexachlorobutadiene Hexachlorobutadiene	20 19	ug/kg	U	1.5 2.3	mg/kg OC
Boeing Boeing	Nearshore south	898	SD0012 SD0009	SD0012 SD0009	Hexachlorobutadiene	20	ug/kg ug/kg	U	1.7	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Hexachlorobutadiene	6.1	ug/kg	U	0.21	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Hexachlorobutadiene	20	ug/kg	U	0.63	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Hexachlorobutadiene	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	Hexachlorobutadiene	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	Hexachlorobutadiene	19	ug/kg	U	1.6	mg/kg OC
EPA SI EPA SI	Navigation north Navigation T-117	800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	Hexachlorocyclopentadiene Hexachlorocyclopentadiene	100	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR216-0000 SD-DR205-0000	Hexachlorocyclopentadiene	100	ug/kg ug/kg	UJ		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Hexachlorocyclopentadiene	100	ug/kg	UJ		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Hexachlorocyclopentadiene	100	ug/kg	UJ		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Hexachlorocyclopentadiene	100	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	Hexachlorocyclopentadiene	96	ug/kg	UJ		
Boeing	Nearshore south	895	SD0019	SD0019	Hexachlorocyclopentadiene	98	ug/kg	UJ		
Boeing Boeing	Nearshore south Nearshore south	897 898	SD0012 SD0009	SD0012 SD0009	Hexachlorocyclopentadiene Hexachlorocyclopentadiene	95 99	ug/kg ug/kg	UJ		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Hexachlorocyclopentadiene	100	ug/kg	UJ		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Hexachlorocyclopentadiene	100	ug/kg	UJ		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Hexachlorocyclopentadiene	100	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	Hexachlorocyclopentadiene	98	ug/kg	UJ		
Boeing	T-117 EAA	893	SD0010	SD0010	Hexachlorocyclopentadiene	96	ug/kg	UJ		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Hexachloroethane	20	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Hexachloroethane	20	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Hexachloroethane	20	ug/kg	U		
EPA SI EPA SI	Nearshore north Nearshore south	793 775	DR227-0000 DR209-0000	SD-DR227-0000 SD-DR209-0000	Hexachloroethane Hexachloroethane	20	ug/kg ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR209-0000 SD-DR210-0000	Hexachloroethane	20	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	Hexachloroethane	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	Hexachloroethane	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	Hexachloroethane	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	Hexachloroethane	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Hexachloroethane	3.1	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Hexachloroethane	20	ug/kg	U		
EPA SI	T-117 EAA	774 892	DR208-0000 SD0011	SD-DR208-0000 SD0011	Hexachloroethane Hexachloroethane	20 20	ug/kg	UJ		
Boeing Boeing	T-117 EAA T-117 EAA	893	SD0011	SD0011	Hexachloroethane	19	ug/kg ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Isophorone	20	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Isophorone	20	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Isophorone	20	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Isophorone	20	ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Isophorone	20	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Isophorone	20	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	Isophorone	19	ug/kg	U		
Boeing	Nearshore south	895 897	SD0019 SD0012	SD0019 SD0012	Isophorone	20 19	ug/kg	U		
Boeing Boeing	Nearshore south Nearshore south	898	SD0012 SD0009	SD0012 SD0009	Isophorone Isophorone	20	ug/kg ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Isophorone	20	ug/kg	U		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Isophorone	20	ug/kg	U		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Isophorone	20	ug/kg	UJ		
Boeing	T-117 EAA	892	SD0011	SD0011	Isophorone	20	ug/kg	U		
Boeing	T-117 EAA	893	SD0010	SD0010	Isophorone	19	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Methyl iso-butyl ketone	6.1	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Nitrobenzene	20	ug/kg	U		
EPA SI EPA SI	Navigation T-117	784 771	DR218-0000 DR205-0000	SD-DR218-0000 SD-DR205-0000	Nitrobenzene	20	ug/kg	U		
EPA SI	Nearshore north Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Nitrobenzene Nitrobenzene	20	ug/kg ug/kg	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Nitrobenzene	20	ug/kg	U		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Nitrobenzene	20	ug/kg	U		
Boeing	Nearshore south	894	SD0018	SD0018	Nitrobenzene	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	Nitrobenzene	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	Nitrobenzene	19	ug/kg	U		
Boeing	Nearshore south	898	SD0009	SD0009	Nitrobenzene	20	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Nitrobenzene	20	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	773 774	DR207-0000 DR208-0000	SD-DR207-0000 SD-DR208-0000	Nitrobenzene Nitrobenzene	20	ug/kg	U		
Boeing	T-117 EAA	892	SD0011	SD-DR208-0000 SD0011	Nitrobenzene	20	ug/kg ug/kg	U		
Boeing	T-117 EAA	893	SD0011	SD0011	Nitrobenzene	19	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	N-Nitroso-di-n-propylamine	40	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	N-Nitroso-di-n-propylamine	40	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	N-Nitroso-di-n-propylamine	40	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	N-Nitroso-di-n-propylamine	40	ug/kg	U		



EPA SI Boeing Boeing Boeing Boeing EPA SI EPA SI EPA SI Boeing Boeing Boeing	Region Nearshore south Nearshore south Nearshore south Nearshore south Nearshore south Nearshore south	775 776 894	SedQual Sample ID DR209-0000 DR210-0000	Sample ID SD-DR209-0000	Parameter N-Nitroso-di-n-propylamine	Value 40	Unit dw ug/kg	Q	Value OC	Unit OC dw
EPA SI Boeing Boeing Boeing Boeing EPA SI EPA SI EPA SI Boeing Boeing Boeing	Nearshore south Nearshore south Nearshore south Nearshore south	776 894		SD-DR209-0000	N-Nitroso-di-n-propylamine	40	/1			
Boeing Boeing Boeing Boeing EPA SI EPA SI EPA SI Boeing Boeing Boeing	Nearshore south Nearshore south Nearshore south	894	DR210-0000				ug/kg	U		
Boeing Boeing Boeing EPA SI EPA SI EPA SI Boeing Boeing Boeing EPA SI	Nearshore south Nearshore south			SD-DR210-0000	N-Nitroso-di-n-propylamine	40	ug/kg	U		
Boeing Boeing EPA SI EPA SI EPA SI Boeing Boeing Boeing EPA SI	Nearshore south		SD0018	SD0018	N-Nitroso-di-n-propylamine	38	ug/kg	U		
Boeing EPA SI EPA SI EPA SI Boeing Boeing EPA SI		895	SD0019	SD0019	N-Nitroso-di-n-propylamine	39	ug/kg	U		
EPA SI EPA SI EPA SI Boeing Boeing EPA SI	nearshore south	897	SD0012	SD0012	N-Nitroso-di-n-propylamine	38	ug/kg	U		
EPA SI EPA SI Boeing Boeing EPA SI	T-117 EAA	898 772	SD0009 DR206-0000	SD0009 SD-DR206-0000	N-Nitroso-di-n-propylamine	40 40	ug/kg	U		
EPA SI Boeing Boeing EPA SI	T-117 EAA	773	DR207-0000	SD-DR206-0000 SD-DR207-0000	N-Nitroso-di-n-propylamine N-Nitroso-di-n-propylamine	40	ug/kg ug/kg	U		
Boeing Boeing EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	N-Nitroso-di-n-propylamine	40	ug/kg	UJ		
Boeing EPA SI	T-117 EAA	892	SD0011	SD0011	N-Nitroso-di-n-propylamine	39	ug/kg	U		
EPA SI	T-117 EAA	893	SD0010	SD0010	N-Nitroso-di-n-propylamine	38	ug/kg	U		
	Navigation north	800	DR234-0000	SD-DR234-0000	N-Nitrosodiphenylamine	40	ug/kg	U	2.3	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	N-Nitrosodiphenylamine	40	ug/kg	U	1.6	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	N-Nitrosodiphenylamine	40	ug/kg	U	1.8	mg/kg OC
	Nearshore north	793	DR227-0000	SD-DR227-0000	N-Nitrosodiphenylamine	40	ug/kg	U	2.0	mg/kg OC
	Nearshore south	775	DR209-0000	SD-DR209-0000	N-Nitrosodiphenylamine	40	ug/kg	U	3.9	mg/kg OC
	Nearshore south	776	DR210-0000	SD-DR210-0000	N-Nitrosodiphenylamine	40	ug/kg	U	2.8	mg/kg OC
-	Nearshore south	894	SD0018	SD0018	N-Nitrosodiphenylamine	19	ug/kg	U	1.9	mg/kg OC
-	Nearshore south	895	SD0019 SD0012	SD0019 SD0012	N-Nitrosodiphenylamine N-Nitrosodiphenylamine	20 19	ug/kg	U	1.5	mg/kg OC
	Nearshore south Nearshore south	897 898	SD0012 SD0009	SD0012 SD0009	N-Nitrosodiphenylamine N-Nitrosodiphenylamine	20	ug/kg ug/kg	U	2.3	mg/kg OC mg/kg OC
-	T-117 EAA	772	DR206-0000	SD-DR206-0000	N-Nitrosodiphenylamine	40	ug/kg ug/kg	U	1.7	mg/kg OC
	T-117 EAA	773	DR207-0000	SD-DR207-0000	N-Nitrosodiphenylamine	40	ug/kg	U	1.3	mg/kg OC
	T-117 EAA	774	DR208-0000	SD-DR208-0000	N-Nitrosodiphenylamine	40	ug/kg	UJ	3.1	mg/kg OC
	T-117 EAA	892	SD0011	SD0011	N-Nitrosodiphenylamine	20	ug/kg	U	1.8	mg/kg OC
	T-117 EAA	893	SD0010	SD0010	N-Nitrosodiphenylamine	19	ug/kg	U	1.6	mg/kg OC
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Pentachlorophenol	100	ug/kg	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Pentachlorophenol	100	ug/kg	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Pentachlorophenol	100	ug/kg	U		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Pentachlorophenol	100	ug/kg	U		
	Nearshore south	775	DR209-0000	SD-DR209-0000	Pentachlorophenol	100	ug/kg	U		
	Nearshore south	776	DR210-0000	SD-DR210-0000	Pentachlorophenol	100	ug/kg	UJ		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	Pentachlorophenol	100	ug/kg	UJ		
	T-117 EAA	773	DR207-0000	SD-DR207-0000	Pentachlorophenol	100	ug/kg	U		
	T-117 EAA	774	DR208-0000 DR234-0000	SD-DR208-0000	Pentachlorophenol	100	ug/kg	UJ		
	Navigation north Navigation T-117	800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	Phenol Phenol	70 50	ug/kg ug/kg			
	Nearshore north	771	DR205-0000	SD-DR205-0000	Phenol	250	ug/kg			
	Nearshore north	793	DR227-0000	SD-DR227-0000	Phenol	410	ug/kg			
	Nearshore south	775	DR209-0000	SD-DR209-0000	Phenol	430	ug/kg			
	Nearshore south	776	DR210-0000	SD-DR210-0000	Phenol	20	ug/kg	UJ		
Boeing	Nearshore south	894	SD0018	SD0018	Phenol	19	ug/kg	U		
Boeing	Nearshore south	895	SD0019	SD0019	Phenol	20	ug/kg	U		
Boeing	Nearshore south	897	SD0012	SD0012	Phenol	57	ug/kg			
-	Nearshore south	898	SD0009	SD0009	Phenol	20	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	Phenol	320	ug/kg			
	T-117 EAA	773	DR207-0000	SD-DR207-0000	Phenol	2100	ug/kg			
	T-117 EAA	774	DR208-0000	SD-DR208-0000	Phenol	150	ug/kg	J		
	T-117 EAA T-117 EAA	892 893	SD0011 SD0010	SD0011 SD0010	Phenol Phenol	20 19	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	Tert-butyl methyl ether	3.1	ug/kg ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	trans-1,4-Dichloro-2-butene	15	ug/kg	U		
2.7.0.			2.1200 0000	02 211200 0000	Volatile Organics		ug/ng			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,1,1,2-Tetrachloroethane	3.1	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,1,1-Trichloroethane	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,1,2,2-Tetrachloroethane	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,1,2-Trichloroethane	3.1	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,1,2-Trichlorotrifluoroethane	3.1	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,1-Dichloroacetone	6.1	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,1-Dichloroethane	3.1	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,1-Dichloroethene	3.1	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,1-Dichloropropene	3.1	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,3-Trichlorobenzene	6.1	ug/kg	U		
	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,3-Trichloropropane	3.1	ug/kg	U	4.4	ma/k= OC
	Navigation north Navigation T-117	800 784	DR234-0000 DR218-0000	SD-DR234-0000 SD-DR218-0000	1,2,4-Trichlorobenzene 1,2,4-Trichlorobenzene	20	ug/kg	U	1.1 0.78	mg/kg OC
	Navigation 1-117 Nearshore north	784 771	DR218-0000 DR205-0000	SD-DR218-0000 SD-DR205-0000	1,2,4-Trichlorobenzene	20	ug/kg	U	0.78	mg/kg OC mg/kg OC
	Nearshore north	771	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	1,2,4-Trichlorobenzene	20	ug/kg ug/kg	U	1.0	mg/kg OC mg/kg OC
	Nearshore south	775	DR227-0000 DR209-0000	SD-DR227-0000 SD-DR209-0000	1,2,4-Trichlorobenzene	20	ug/kg ug/kg	U	1.0	mg/kg OC
	Nearshore south	776	DR210-0000	SD-DR209-0000 SD-DR210-0000	1,2,4-Trichlorobenzene	20	ug/kg ug/kg	U	1.4	mg/kg OC
	Nearshore south	894	SD0018	SD0018	1,2,4-Trichlorobenzene	19	ug/kg	U	1.9	mg/kg OC
-	Nearshore south	895	SD0019	SD0019	1,2,4-Trichlorobenzene	20	ug/kg	U	1.5	mg/kg OC
	Nearshore south	897	SD0012	SD0012	1,2,4-Trichlorobenzene	19	ug/kg	U	2.3	mg/kg OC
-	Nearshore south	898	SD0009	SD0009	1,2,4-Trichlorobenzene	20	ug/kg	U	1.7	mg/kg OC



		Location	SedQual				Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	OC	OC dw
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,4-Trichlorobenzene	6.1	ug/kg	U	0.21	mg/kg OC
EPA SI EPA SI	T-117 EAA T-117 EAA	773	DR207-0000	SD-DR207-0000	1,2,4-Trichlorobenzene	20	ug/kg	U	0.63	mg/kg OC
Boeing	T-117 EAA	774 892	DR208-0000 SD0011	SD-DR208-0000 SD0011	1,2,4-Trichlorobenzene 1,2,4-Trichlorobenzene	20	ug/kg ug/kg	U	1.6 1.8	mg/kg OC mg/kg OC
Boeing	T-117 EAA	893	SD0011	SD0011	1,2,4-Trichlorobenzene	19	ug/kg	U	1.6	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2,4-Trimethylbenzene	3.1	ug/kg	U		grg o o
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2-Dibromo-3-chloropropane	15	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2-Dibromoethane (EDB)	3.1	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	1,2-Dichlorobenzene	20	ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	1,2-Dichlorobenzene	20	ug/kg	U	0.78	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	1,2-Dichlorobenzene	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	1,2-Dichlorobenzene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	1,2-Dichlorobenzene	20	ug/kg	U	1.9	mg/kg OC
EPA SI Boeing	Nearshore south Nearshore south	776 894	DR210-0000 SD0018	SD-DR210-0000 SD0018	1,2-Dichlorobenzene 1,2-Dichlorobenzene	20 19	ug/kg ug/kg	U	1.4 1.9	mg/kg OC mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	1,2-Dichlorobenzene	20	ug/kg	U	1.5	mg/kg OC
Boeing	Nearshore south	897	SD0013	SD0013	1,2-Dichlorobenzene	19	ug/kg	U	2.3	mg/kg OC
Boeing	Nearshore south	898	SD0009	SD0009	1,2-Dichlorobenzene	20	ug/kg	U	1.7	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2-Dichlorobenzene	3.1	ug/kg	U	0.10	mg/kg OC
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	1,2-Dichlorobenzene	20	ug/kg	U	0.63	mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	1,2-Dichlorobenzene	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	1,2-Dichlorobenzene	20	ug/kg	U	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	1,2-Dichlorobenzene	19	ug/kg	U	1.6	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2-Dichloroethane	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1,2-Dichloropropane	3.1	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	1,3,5-Trimethylbenzene 1,3-Dichloropropane	3.1	ug/kg	U		
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	1.4-Dichlorobenzene	20	ug/kg ug/kg	U	1.1	mg/kg OC
EPA SI	Navigation T-117	784	DR218-0000	SD-DR234-0000 SD-DR218-0000	1,4-Dichlorobenzene	20	ug/kg	U	0.78	mg/kg OC
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	1,4-Dichlorobenzene	20	ug/kg	U	0.90	mg/kg OC
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	1,4-Dichlorobenzene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	1,4-Dichlorobenzene	20	ug/kg	U	1.9	mg/kg OC
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	1,4-Dichlorobenzene	20	ug/kg	U	1.4	mg/kg OC
Boeing	Nearshore south	894	SD0018	SD0018	1,4-Dichlorobenzene	19	ug/kg	UJ	1.9	mg/kg OC
Boeing	Nearshore south	895	SD0019	SD0019	1,4-Dichlorobenzene	20	ug/kg	UJ	1.5	mg/kg OC
Boeing	Nearshore south	897	SD0012	SD0012	1,4-Dichlorobenzene	19	ug/kg	UJ	2.3	mg/kg OC
Boeing	Nearshore south	898 772	SD0009 DR206-0000	SD0009 SD-DR206-0000	1,4-Dichlorobenzene	20	ug/kg	UJ	1.7 0.10	mg/kg OC
EPA SI EPA SI	T-117 EAA T-117 EAA	773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	1,4-Dichlorobenzene 1,4-Dichlorobenzene	3.1	ug/kg ug/kg	U	0.10	mg/kg OC mg/kg OC
EPA SI	T-117 EAA	774	DR208-0000	SD-DR207-0000 SD-DR208-0000	1,4-Dichlorobenzene	20	ug/kg	UJ	1.6	mg/kg OC
Boeing	T-117 EAA	892	SD0011	SD0011	1,4-Dichlorobenzene	20	ug/kg	UJ	1.8	mg/kg OC
Boeing	T-117 EAA	893	SD0010	SD0010	1,4-Dichlorobenzene	19	ug/kg	UJ	1.6	mg/kg OC
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	1-Chlorobutane	3.1	ug/kg	U		- 0
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2,2-Dichloropropane	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2-Chlorotoluene	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2-Hexanone	6.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	2-Nitropropane	15	ug/kg	U		
EPA SI	T-117 EAA T-117 EAA	772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	4-Chlorotoluene	3.1	ug/kg	U		
EPA SI EPA SI	T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	Acetone Allyl Chloride	31	ug/kg ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Benzene	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Bromobenzene	3.1	ug/kg	U		1
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Bromochloromethane	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Bromodichloromethane	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Bromoform	6.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Bromomethane	15	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Carbon disulfide	6.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Carbon tetrachloride	3.1	ug/kg	U		
EPA SI EPA SI	T-117 EAA T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	Chlorobenzene Chloroethane	3.1 6.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000 SD-DR206-0000	Chloroform	3.1	ug/kg ug/kg	U		+
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Chloromethane	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	cis-1,2-Dichloroethene	3.1	ug/kg	U		1
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	cis-1,3-Dichloropropene	3.2	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Cymene	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Dibromochloromethane	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Dibromomethane	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Dichloromethane	15	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Diethyl ether	3.1	ug/kg	U		
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Ethyl Methacrylate	3.1	ug/kg	U		-
EPA SI	T-117 EAA T-117 EAA	772 772	DR206-0000 DR206-0000	SD-DR206-0000 SD-DR206-0000	Ethylbenzene Iodomethane	3.1	ug/kg ug/kg	U		
EDV 61				レント・レンスいい ついいいし	I MANUTEURIE	. O. I	uu/KU			1
EPA SI EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	iso-Propylbenzene	15	ug/kg	U		



Event	пропак	7 tt	Location	SedQual	, , , , , , , , , , , , , , , , , , ,	5 cm) sealment		Unit		Value	Unit
## PR 83 1-117 EAA	Event	Region			Sample ID	Parameter	Value		Q		
EPA SI 1-117 EAA											
EPA SI	EPA SI					Methyl ethyl ketone	6.1		U		
FPA S	EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Methyl Methacrylate	6.1	ug/kg	U		
FRA S											
EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 see-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 see-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772 DR.260-0000 So-DR.260-0000 tenf-Builyterazere 3.1 uykg U EPA SI T-117 EAA 772											
EPA SI T-117 EAA 772 CR266-0000 SO-PRES-0000 Symme S1 LygNg U EPA SI T-117 EAA 772 CR266-0000 SO-PRES-0000 Trush-sockherene 3.1 LygNg U EPA SI T-117 EAA 772 CR266-0000 SO-PRES-0000 Trush-sockherene 3.1 LygNg U EPA SI T-117 EAA 772 CR266-0000 SO-PRES-0000 Trush-sockherene 3.1 LygNg U EPA SI T-117 EAA 772 CR266-0000 SO-PRES-0000 Trush-sockherene 3.1 LygNg U EPA SI T-117 EAA 772 CR266-0000 SO-PRES-0000 Trush-sockherene 3.1 LygNg U EPA SI T-117 EAA 772 CR266-0000 SO-PRES-0000 Trush-sockherene 3.1 LygNg U EPA SI T-117 EAA 772 CR266-0000 SO-PRES-00000 Trush-sockherene 3.1 LygNg U EPA SI T-117 EAA 772 CR266-0000 SO-PRES-0000 SO-PRES-000									_		
EPA SI T-117 EAA 772 D8206-0000 SD-P8206-0000 met Perushivenzene 3.1 ug/kg U PEPA SI T-117 EAA 772 D8206-0000 SD-P8206-0000 fresuchivenethere 3.1 ug/kg U PEPA SI T-117 EAA 772 D8206-0000 SD-P8206-0000 fresuchivenethere 3.1 ug/kg U PEPA SI T-117 EAA 772 D8206-0000 SD-P8206-0000 fresuchivenethere 3.1 ug/kg U PEPA SI T-117 EAA 772 D8206-0000 SD-P8206-0000 fresuchivenethere 3.1 ug/kg U PEPA SI T-117 EAA 772 D8206-0000 SD-P8206-0000 fresuchivenethere 3.1 ug/kg U PEPA SI T-117 EAA 772 D8206-0000 SD-P8206-0000 fresion-1-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-						•					
EPA S						,			_		
EPA SI 1-117 EAA 772 D8269-0000 SD-P6206-0000 Flash SI 1-117 EAA 772 D8269-0000 SD-P6206-0000 Flash SI 1-117 EAA 772 D8269-0000 SD-D8206-0000 Flash SI 1-117 EAA 772 D8269-0000 SD-D8226-0000 Flash SI 1-117 EAA 772 D8269-0000 Flash SI 1-117 EAA 772 D8269-0000 Flash SI 1-117 EAA 772 D8269-0000 SD-D8226-0000 Flash SI 1-1						·					
EPA S									_		
EPA S T-117 EAA									_		
EPA S T-117 EAA 772 DR209-0000 SD-R209-0000 Trintinorunbrene 3.1 ug/kg U EPA S T-117 EAA 772 DR209-0000 SD-R209-0000 Trintinorunbrene 3.1 ug/kg U EPA SI T-117 EAA 772 DR209-0000 SD-R209-0000 Nylence (entrol) 3.1 ug/kg U EPA SI T-117 EAA 772 DR209-0000 SD-R209-0000 Nylence (entrol) 3.1 ug/kg U EPA SI T-117 EAA 772 DR209-0000 SD-R209-0000 Nylence (entrol) 3.1 ug/kg U EPA SI T-117 EAA 772 DR209-0000 SD-R209-0000 Nylence (entrol) 2.2 3.5 % Plant 2 RF1-2b Nivelgalon roch 453 DUWR9-0000 SD28-DWW9-0000 Total Organic Canton (TOC) 1.2 % EPA SI Nivelgalon roch 456 DUWR9-0000 SD28-DWW9-0000 Total Organic Canton (TOC) 1.6 % EPA SI Nivelgalon roch 456<											
EPA SI 11-17 EAA 772 DR200-0000 SDR200-0000 No Introduction contention 3.1 up/kg U EPA SI 7-117 EAA 772 DR200-0000 SDR200-0000 Nyther (freits & para) 6.1 up/kg U EPA SI 7-117 EAA 772 DR200-0000 SDR200-0000 Nyther (freits & para) 6.1 up/kg U FPAR SI 7-117 EAA 772 DR200-0000 SDR200-0000 Nyther (freits & para) 6.1 up/kg U NOAA Navigation north 483 CUMYPS-0000 SDR200-0000 Nyther (freits & para) COLOR 2.3 % PERI SI REFAX Novigation north 466 DUWPS-0000 SDR200-0000 TOTAL (freits & para) Novigation north 466 DUWPS-0000 SDR200-0000 TOTAL (freits & para) 1.2 % PERA SI Navigation north 466 DUWPS-0000 SDR210-0000 TOTAL (freits & para) 1.2 % PERA SI Navigation north 467 DUWPS-0000 SDR200-0000 TOTAL (freits & para)	EPA SI										
EBA SI T-117 EBA 772 DR209-00000 SDP209-00000 Sylene (meta 8 para) 6.1 up/kg U EBA SI T-117 EBA 772 DR209-0000 SDP209-00000 Sylene (meta 8 para) 6.1 up/kg U PERS BI T-117 EBA Navigation north 32 CH04-04 CH04-04 Total Organic Cathor (TOC) 1.2 % PERR Z RF-26 Navigation north 483 DUW78-0000 SDB-DUW79-0000 Total Organic Cathor (TOC) 1.2 % PERR Z RF-26 Navigation north 485 DUW80-0000 SDB-DUW89-0000 Total Organic Cathor (TOC) 1.2 % PERR S R Navigation 7-117 497 DUW80-0000 SDB-292-0000 SDB-292-0000 Total Organic Cathor (TOC) 1.8 % PERS S R Navigation 7-117 497 DV21-0000 SDB-292-0000 Total Organic Cathor (TOC) 2.6 % NOAA Navigation 7-117 497 DV21-0000 SDB-292-0000 Total Organic Cathor (TOC) 2.3 % NOAA Navigation 7-117 AV2-0000 <td>EPA SI</td> <td></td> <td></td> <td></td> <td></td> <td>Trichlorofluoromethane</td> <td></td> <td></td> <td>U</td> <td></td> <td></td>	EPA SI					Trichlorofluoromethane			U		
EPA SI N-117 EAA 772 DR260-0000 SDR260-0000 SD	EPA SI		772	DR206-0000			3.1		U		
NOAA Navigation north 32	EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Xylene (meta & para)	6.1	ug/kg	U		
NoAA Navigation north 32	EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Xylene (ortho)	3.1	ug/kg	U		
Piloniz REFIZO Novigation north 490 DUV79-0000 SIZB-DUV79-0000 Total Organic Carbon (TOC) 2.3 %						Conventionals					
Pilot 2 RFI-Zo Novigation north						• • • • • • • • • • • • • • • • • • • •					
Plant 2 RF1-2b Navigation north	Plant 2 RFI-2b					, ,					
Plant 2 FF1-2b Navigation north 496 DUW81-0000 SD28-DUW81-0000 Total Organic Carbon (TOC) 2.0 %		0									
EPA SI Navigation north 800 DR234-0000 SD-DR234-0000 Total Organic Carbon (TOC) 1.8 % EPA SI Navigation 17-117 794 DR248-0000 SD-DR218-0000 Total Organic Carbon (TOC) 2.6 % NOAA Navigation 17-117 794 DR248-0000 SD-DR218-0000 Total Organic Carbon (TOC) 2.6 % NOAA Navigation north 309 WST10-08 WST10-08 Total Organic Carbon (TOC) 2.5 % EPA SI Navigation north 771 DR250-0000 SD-DR227-0000 Total Organic Carbon (TOC) 2.9 % NOAA Nearshore south 249 WT07-02 WT07-02 Total Organic Carbon (TOC) 2.0 % EPA SI Nearshore south 775 DR219-0000 DR270-0000 Total Organic Carbon (TOC) 0.05 % EPA SI Nearshore south 894 SD0018 SD0018 Total Organic Carbon (TOC) 0.5 % Boeing Nearshore south 897 SD0018 Total Organic Carbon (TOC) <td></td> <td>•</td> <td></td> <td></td> <td></td> <td>0 ()</td> <td></td> <td></td> <td></td> <td></td> <td></td>		•				0 ()					
Plant 2 BF1-2b Navigation 1-117 497 DUWR2-0000 S02B-DUWR2-0000 Total Organic Cathon (TOC) 1.5 %		-				` ,					
EPA SI Navigation 1-117 784 OR218-0000 SD-DR218-0000 Total Organic Cathon (TOC) 2.6 % NOAA Nearshore north 300 WST10-08 WST10-08 Total Organic Cathon (TOC) 2.5 % EPA SI Nearshore north 771 R92050000 SD-D82650000 Total Organic Cathon (TOC) 1.5 % EPA SI Nearshore north 773 R9227-0000 SD-D82650000 Total Organic Cathon (TOC) 2.0 % NOAA Nearshore south 259 WT07-02 WT07-02 Total Organic Cathon (TOC) 0.0 6 EPA SI Nearshore south 776 DR200000 SD-D8210-0000 Total Organic Cathon (TOC) 0.05 % EPA SI Nearshore south 894 SD0018 SD0018 Total Organic Cathon (TOC) 1.5 % Beeling Nearshore south 897 SD0019 SD0019 Total Organic Cathon (TOC) 1.3 % Beeling Nearshore south 897 SD0012 SD0012 Total Organic Cathon						, ,					
NOAA Nearshore north 300 WST00-01 WST00-01 Total Organic Carbon (TOC) 2.3 %		0									
NOAA Nearshore north 309 WST10-08 WST10-08 Total Organic Carbon (TOC) 1.5 %						0 ()					
EPA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Total Organic Carbon (TOC) 2.2 % EPA SI Nearshore north 793 DR227-0000 SD-DR205-0000 Total Organic Carbon (TOC) 0.67 % NOAA Nearshore south 250 WIT07-02 WIT07-02 Total Organic Carbon (TOC) 0.05 % EPA SI Nearshore south 775 DR209-0000 SD-DR209-0000 Total Organic Carbon (TOC) 1.0 % EPA SI Nearshore south 894 SD0018 SD0018 SD018 Total Organic Carbon (TOC) 1.0 % Boeing Nearshore south 895 SD0019 Total Organic Carbon (TOC) 1.0 % Boeing Nearshore south 897 SD0012 SD0019 Total Organic Carbon (TOC) 1.2 % Boeing Nearshore south 898 SD0009 SD0009 Total Organic Carbon (TOC) 1.2 % Boeing Nearshore south 898 SD0009 Total Organic Carbon (TOC) 1.2						` ,					
EPA SI Nearshore north 793 DR227-0000 Total Organic Carbon (TOC) 2.0 % NOAA Nearshore south 249 W1707-02 W1707-03 Total Organic Carbon (TOC) 0.67 % EPA SI Nearshore south 775 DR2090000 SD-DR2090000 Total Organic Carbon (TOC) 1.0 % EPA SI Nearshore south 775 DR2090000 SD-DR2090000 Total Organic Carbon (TOC) 1.0 % Boeing Nearshore south 845 S00018 SD0018 Total Organic Carbon (TOC) 1.0 % Boeing Nearshore south 845 S00018 SD0019 Total Organic Carbon (TOC) 0.82 % Boeing Nearshore south 848 S00019 SD0012 Total Organic Carbon (TOC) 1.2 % NOAA T-117 EAA 248 W1707-01 W1707-01 Total Organic Carbon (TOC) 1.2 % EPA SI T-117 EAA 772 DR209-0000 SD-DR209-0000 Total Organic Carbon (TOC) 3.0 <											
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EPA SI Nearshore south 776 DR210-0000 SD-DR210-0000 Total Organic Carbon (TOC) 1.5 % Boeing Nearshore south 895 SD0019 SD0019 Total Organic Carbon (TOC) 1.0 % Boeing Nearshore south 895 SD0019 SD0012 Total Organic Carbon (TOC) 1.2 % Boeing Nearshore south 898 SD00019 Total Organic Carbon (TOC) 1.2 % NOAA T-147EAA 248 WITO7-01 WITO7-02 Total Organic Carbon (TOC) 1.9 % NOAA T-147EAA 248 WITO7-01 WITO7-02 Total Organic Carbon (TOC) 1.9 % EPA SI T-147EAA 772 DR206-0000 SD-DR207-0000 Total Organic Carbon (TOC) 3.0 % EPA SI T-147EAA 773 DR206-0000 SD-DR207-0000 Total Organic Carbon (TOC) 3.2 % EPA SI T-147EAA 892 SD0011 SD0011 Total Organic Carbon (TOC) 1.2 %						. ,					
Boeing Nearshore south 895 SD0019 SD0019 Total Organic Carbon (TOC) 1.3 %						, ,					
Boeing Nearshore south 897 SD0012 SD0012 Total Organic Carbon (TOC) 0.82 % Boeing Nearshore south 898 SD0009 SD0009 Total Organic Carbon (TOC) 1.2 % NOAA 7-117 EAA 248 WIT07-01 WT07-01 Total Organic Carbon (TOC) 0.31 % FPA SI 7-117 EAA 772 DR206-0000 SD-DR206-0000 Total Organic Carbon (TOC) 3.0 % EPA SI 7-117 EAA 773 DR207-0000 SD-DR206-0000 Total Organic Carbon (TOC) 3.2 % EPA SI 7-117 EAA 773 DR207-0000 SD-DR207-0000 Total Organic Carbon (TOC) 3.2 % EPA SI 7-117 EAA 892 SD0011 SD0010 Total Organic Carbon (TOC) 3.2 % Beeing 7-117 EAA 892 SD0011 Total Organic Carbon (TOC) 1.1 % Boeing 7-117 EAA 893 SD0010 SD0010 Total Solids** 56 % Boein	Boeing					· ,					
Boeing Nearshore south 898 S00009 S00009 Total Organic Carbon (TOC) 1.2 %	Boeing	Nearshore south	895	SD0019	SD0019	Total Organic Carbon (TOC)	1.3	%			
NOAA	Boeing	Nearshore south	897	SD0012	SD0012	Total Organic Carbon (TOC)	0.82	%			
NOAA						, ,					
EPA SI T-117 EAA 772 DR206-0000 Sb-DR207-0000 Total Organic Carbon (TOC) 3.0 % EPA SI T-117 EAA 773 DR207-0000 Sb-DR207-0000 Total Organic Carbon (TOC) 3.2 % EPA SI T-117 EAA 892 SD0011 SD0011 Total Organic Carbon (TOC) 1.1 % Boeing T-117 EAA 893 SD0010 SD0011 Total Organic Carbon (TOC) 1.1 % Boeing Nearshore south 894 SD0018 SD0019 Total Organic Carbon (TOC) 1.2 % Boeing Nearshore south 894 SD0018 SD0018 Total solids* 48 % Boeing Nearshore south 897 SD0012 SD0012 Total solids* 48 % Boeing Nearshore south 898 SD0009 SD0019 Total solids* 48 % Boeing T-117 EAA 892 SD0011 SD0011 Total solids* 48 % Boeing T-						0 (/					
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EPA S T-117 EAA						` ,					
Boeing											
Boeing T-117 EAA 893 SD0010 SD0010 Total Organic Carbon (TOC) 1.2 %						0 ()					
Boeing Nearshore south 894 SD0018 SD0019 Total solids* 56 %	•										
Boeing Nearshore south 895 SD0019 SD0019 Total solids* 48						• • • • • • • • • • • • • • • • • • • •					
Boeing Nearshore south 897 SD0012 SD0012 Total solides 52 % Boeing Nearshore south 898 SD0009 SD0009 Total solides 48 % Boeing T-117 EAA 892 SD0011 SD0011 Total solides 53 % Boeing T-117 EAA 893 SD0010 SD0010 Total solides 50 % Boeing T-117 EAA 893 SD0010 SD0010 Total solides 50 % Boeing T-117 EAA 893 SD0010 SD0010 Total solides 50 % Boeing T-117 EAA SD0011 SD0010 Total solides 50 % Boeing T-117 EAA SD0010 SD0010 Total solides SD0010 SD0100 SD0010											
Boeing Nearshore south 898 SD0009 SD0009 Total solids [®] 48 %											
Boeing T-117 EAA 892 SD0011 SD0011 Total solids 53 %	Boeing										
NA Navigation north 32	Boeing		892		SD0011	Total solids ^a	53	%			
NOAA Navigation north 32 CH04-04 CH04-04 Clay 14 %	Boeing	T-117 EAA	893	SD0010	SD0010	Total solids ^a	50	%			
Plant 2 RFI-2b Navigation north 493 DUW78-0000 SD2B-DUW78-0000 Clay 12 % Plant 2 RFI-2b Navigation north 494 DUW97-0000 SD2B-DUW79-0000 Clay 3.0 % Plant 2 RFI-2b Navigation north 495 DUW80-0000 SD2B-DUW80-0000 Clay 10 % Plant 2 RFI-2b Navigation north 496 DUW81-0000 SD2B-DUW81-0000 Clay 11 % PPA SI Navigation T-117 497 DUW82-0000 SD-BR234-0000 Clay 11 % EPA SI Navigation T-117 784 DR218-0000 SD-DR218-0000 Clay 12 % EPA SI Navigation T-117 784 DR218-0000 SD-DR218-0000 Clay 12 % NOAA Nearshore north 300 WST09-01 WST09-01 Clay 14 % J EPA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Clay 12 % J						Grain size					
Plant 2 RFI-2b Navigation north 494 DUW79-0000 SD2B-DUW79-0000 Clay 3.0 % Plant 2 RFI-2b Navigation north 495 DUW80-0000 SD2B-DUW80-0000 Clay 10 % Plant 2 RFI-2b Navigation north 496 DUW81-0000 SD2B-DUW81-0000 Clay 11 % EPA SI Navigation north 800 DR234-0000 SD-DR234-0000 Clay 11 % Plant 2 RFI-2b Navigation north 497 DUW82-0000 SD-DR234-0000 Clay 11 % Plant 2 RFI-2b Navigation north 497 DUW82-0000 SD-DR234-0000 Clay 11 % Plant 2 RFI-2b Navigation north 497 DUW82-0000 SD-DR234-0000 Clay 11 % Plant 2 RFI-2b Navigation north 497 DUW82-0000 SD-BDW82-0000 Clay 12 % J EPA SI Nearshore north 300 WST10-08 WST10-08 Clay 15	NOAA	Navigation north	32	CH04-04	CH04-04	Clay	14	%			
Plant 2 RFI-2b Navigation north 495 DUW80-0000 SD2B-DUW80-0000 Clay 10 % Plant 2 RFI-2b Navigation north 496 DUW81-0000 SD2B-DUW81-0000 Clay 11 % EPA SI Navigation north 800 DR234-0000 SD-DR234-0000 Clay 11 % Plant 2 RFI-2b Navigation T-117 497 DUW82-0000 SD2B-DUW82-0000 Clay 12 % Plant 2 RFI-2b Navigation T-117 497 DUW82-0000 SD2B-DUW82-0000 Clay 12 % EPA SI Navigation T-117 784 DR218-0000 SD-DR218-0000 Clay 14 % J NOAA Nearshore north 300 WST09-01 WST09-01 Clay 22 % NOAA Nearshore north 771 DR205-0000 SD-DR205-0000 Clay 15 % EPA SI Nearshore south 793 DR227-0000 SD-DR227-0000 Clay 6.4 % NOAA	Plant 2 RFI-2b	Navigation north	493	DUW78-0000		Clay	12	%			
Plant 2 RFI-2b Navigation north 496 DUW81-0000 SD2B-DUW81-0000 Clay 11 % EPA SI Navigation north 800 DR234-0000 SD-DR234-0000 Clay 11 % Plant 2 RFI-2b Navigation T-117 497 DUW82-0000 SD2B-DUW82-0000 Clay 12 % EPA SI Navigation T-117 784 DR218-0000 SD-DR218-0000 Clay 14 % J NOAA Nearshore north 300 WST09-01 WST09-01 Clay 22 % NOAA Nearshore north 309 WST10-08 WST10-08 Clay 15 % EPA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Clay 12 % J EPA SI Nearshore south 249 WIT07-02 WIT07-02 Clay 6.4 % NOAA Nearshore south 250 WIT07-03 WIT07-03 Clay 0.97 % EPA SI Nearshore south	Plant 2 RFI-2b	•				Clay					
EPA SI Navigation north 800 DR234-0000 SD-DR234-0000 Clay 11 % Plant 2 RFI-2b Navigation T-117 497 DUW82-0000 SD2B-DUW82-0000 Clay 12 % EPA SI Navigation T-117 784 DR218-0000 SD-DR218-0000 Clay 14 % J NOAA Nearshore north 300 WST09-01 WST09-01 Clay 22 % NOAA Nearshore north 309 WST10-08 Clay 15 % EPA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Clay 12 % J EPA SI Nearshore north 793 DR227-0000 SD-DR227-0000 Clay 11 % J NOAA Nearshore south 249 WIT07-02 WIT07-02 Clay 6.4 % NOAA Nearshore south 250 WIT07-03 WIT07-03 Clay 0.97 % EPA SI Nearshore south 77	Plant 2 RFI-2b	•				·					
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EPA SI Navigation T-117 784 DR218-0000 SD-DR218-0000 Clay 14 % J NOAA Nearshore north 300 WST09-01 WST09-01 Clay 22 % NOAA Nearshore north 309 WST10-08 WST10-08 Clay 15 % EPA SI Nearshore north 771 DR205-0000 SD-DR205-0000 Clay 12 % J EPA SI Nearshore north 793 DR227-0000 SD-DR227-0000 Clay 11 % J NOAA Nearshore south 249 WIT07-02 WIT07-02 Clay 6.4 % NOAA Nearshore south 250 WIT07-03 WIT07-03 Clay 0.97 % EPA SI Nearshore south 775 DR209-0000 SD-DR209-0000 Clay 4.4 % EPA SI Nearshore south 776 DR210-0000 SD-DR210-0000 Clay 8.0 % Boeing Nearshore south <td></td> <td></td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td>						-					
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EPA SI Nearshore north 793 DR227-0000 SD-DR227-0000 Clay 11 % J NOAA Nearshore south 249 WIT07-02 WIT07-02 Clay 6.4 % NOAA Nearshore south 250 WIT07-03 WIT07-03 Clay 0.97 % EPA SI Nearshore south 775 DR209-0000 SD-DR209-0000 Clay 4.4 % EPA SI Nearshore south 776 DR210-0000 SD-DR210-0000 Clay 8.0 % Boeing Nearshore south 894 SD0018 SD0018 Clay 8.0 % Boeing Nearshore south 895 SD0019 SD0019 Clay 13 % Boeing Nearshore south 897 SD0012 SD0012 Clay 8.0 % Boeing Nearshore south 898 SD0009 SD0009 Clay 12 %						-					
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Boeing Nearshore south 898 SD0009 SD0009 Clay 12 %	Boeing					-					
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1-1		Location	SedQual	(1	5 cm) sediment		Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	OC	OC dw
NOAA EPA SI	T-117 EAA T-117 EAA	301 772	WST09-02 DR206-0000	WST09-02 SD-DR206-0000	Clay	18 12	%	J		
EPA SI	T-117 EAA	773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	Clay	6.4	%	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Clay	7.4	%			
Boeing	T-117 EAA	892	SD0011	SD0011	Clay	7.0	%			
Boeing	T-117 EAA	893	SD0010	SD0010	Clay	8.0	%			
NOAA	Navigation north	32	CH04-04	CH04-04	Fines (percent silt+clay)	77	%			
Plant 2 RFI-2b Plant 2 RFI-2b	Navigation north	493 494	DUW78-0000 DUW79-0000	SD2B-DUW78-0000 SD2B-DUW79-0000	Fines (percent silt+clay) Fines (percent silt+clay)	51 14	%			
Plant 2 RFI-2b	Navigation north	494	DUW80-0000	SD2B-D0W79-0000 SD2B-DUW80-0000	Fines (percent silt+clay)	50	%			
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Fines (percent silt+clay)	69	%			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Fines (percent silt+clay)	55	%			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Fines (percent silt+clay)	81	%			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Fines (percent silt+clay)	90	%	J		
NOAA EPA SI	Nearshore north	300	WST09-01	WST09-01	Fines (percent silt+clay)	95 84	%			
EPA SI	Nearshore north	771 793	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Fines (percent silt+clay) Fines (percent silt+clay)	81	%	J		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Fines (percent silt+clay)	13	%	J		
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Fines (percent silt+clay)	60	%			
Boeing	Nearshore south	894	SD0018	SD0018	Fines (percent silt+clay)	121	%			
Boeing	Nearshore south	895	SD0019	SD0019	Fines (percent silt+clay)	84	%			
Boeing	Nearshore south	897	SD0012	SD0012	Fines (percent silt+clay)	50	%			
Boeing	Nearshore south	898	SD0009	SD0009	Fines (percent silt+clay)	78	%			
EPA SI EPA SI	T-117 EAA T-117 EAA	772 773	DR206-0000 DR207-0000	SD-DR206-0000 SD-DR207-0000	Fines (percent silt+clay) Fines (percent silt+clay)	92 28	%	J		
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Fines (percent silt+clay)	45	%			
Boeing	T-117 EAA	892	SD0011	SD0011	Fines (percent silt+clay)	78	%			
Boeing	T-117 EAA	893	SD0010	SD0010	Fines (percent silt+clay)	78	%			
NOAA	Navigation north	32	CH04-04	CH04-04	Gravel	0.01	%	U		
NOAA	Nearshore north	300	WST09-01	WST09-01	Gravel	0.01	%	U		
NOAA NOAA	Nearshore north	309	WST10-08 WIT07-02	WST10-08	Gravel	0.12	%			
NOAA	Nearshore south Nearshore south	249 250	WIT07-02 WIT07-03	WIT07-02 WIT07-03	Gravel Gravel	2.0	%			
NOAA	T-117 EAA	248	WIT07-03	WIT07-03	Gravel	28	%			
NOAA	T-117 EAA	301	WST09-02	WST09-02	Gravel	0.01	%	U		
Plant 2 RFI-2b	Navigation north	493	DUW78-0000	SD2B-DUW78-0000	Rocks	6.0	%			
	Navigation north	494	DUW79-0000	SD2B-DUW79-0000	Rocks	0.01	%	U		
Plant 2 RFI-2b	Navigation north	495	DUW80-0000	SD2B-DUW80-0000	Rocks	0.01	%	U		
Plant 2 RFI-2b EPA SI	Navigation north	496 800	DUW81-0000	SD2B-DUW81-0000 SD-DR234-0000	Rocks	0.02	%	U		
	Navigation north Navigation T-117	497	DR234-0000 DUW82-0000	SD2B-DUW82-0000	Rocks Rocks	0.01	%	U		
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Rocks	0.01	%	U		
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Rocks	0.03	%			
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Rocks	0.01	%	U		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Rocks	45	%			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Rocks	0.01	%	U		
Boeing Boeing	Nearshore south Nearshore south	894 897	SD0018 SD0012	SD0018 SD0012	Rocks Rocks	9.0	%			
Boeing	Nearshore south	898	SD0012 SD0009	SD0012 SD0009	Rocks	1.0	%			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Rocks	0.03	%	J		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Rocks	10	%			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Rocks	1.2	%			
Boeing	T-117 EAA	892	SD0011	SD0011	Rocks	1.0	%			
NOAA	Navigation north	32	CH04-04	CH04-04	Sand	23	%			
Plant 2 RFI-2b Plant 2 RFI-2b	Navigation north Navigation north	493 494	DUW78-0000 DUW79-0000	SD2B-DUW78-0000 SD2B-DUW79-0000	Sand Sand	40 85	%	-		
	Navigation north	494	DUW80-0000	SD2B-DUW80-0000	Sand	49	%			
	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Sand	29	%			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Sand	45	%			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Sand	15	%			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Sand	10	%	J		
NOAA	Nearshore north	300	WST09-01	WST09-01	Sand	4.7	%			
NOAA EPA SI	Nearshore north Nearshore north	309 771	WST10-08 DR205-0000	WST10-08 SD-DR205-0000	Sand Sand	40 16	%	J		
EPA SI	Nearshore north	771	DR205-0000 DR227-0000	SD-DR205-0000 SD-DR227-0000	Sand	19	%	J		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	Sand	40	%	Ť		
NOAA	Nearshore south	250	WIT07-03	WIT07-03	Sand	94	%	L		
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Sand	43	%			
	Nearshore south	776	DR210-0000	SD-DR210-0000	Sand	40	%			
EPA SI			0000:-				%			
EPA SI Boeing	Nearshore south	894	SD0018	SD0018	Sand	50				
EPA SI Boeing Boeing	Nearshore south Nearshore south	894 895	SD0019	SD0019	Sand	16	%			
EPA SI Boeing	Nearshore south	894								



		Location	SedQual				Unit		Value	Unit
Event	Region	Number	Sample ID	Sample ID	Parameter	Value	dw	Q	oc	OC dw
NOAA	T-117 EAA	301	WST09-02	WST09-02	Sand	28	%			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Sand	8.2	%	J		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Sand	61	%			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Sand	53	%			
Boeing	T-117 EAA	892	SD0011	SD0011	Sand	21	%			
Boeing	T-117 EAA	893	SD0010	SD0010	Sand	22	%			
NOAA	Navigation north	32	CH04-04	CH04-04	Silt	63	%			
Plant 2 RFI-2b	Navigation north	493	DUW78-0000	SD2B-DUW78-0000	Silt	39	%			
Plant 2 RFI-2b	Navigation north	494	DUW79-0000	SD2B-DUW79-0000	Silt	11	%			
Plant 2 RFI-2b	Navigation north	495	DUW80-0000	SD2B-DUW80-0000	Silt	40	%			
Plant 2 RFI-2b	Navigation north	496	DUW81-0000	SD2B-DUW81-0000	Silt	58	%			
EPA SI	Navigation north	800	DR234-0000	SD-DR234-0000	Silt	44	%			
Plant 2 RFI-2b	Navigation T-117	497	DUW82-0000	SD2B-DUW82-0000	Silt	69	%			
EPA SI	Navigation T-117	784	DR218-0000	SD-DR218-0000	Silt	75	%	J		
NOAA	Nearshore north	300	WST09-01	WST09-01	Silt	74	%			
NOAA	Nearshore north	309	WST10-08	WST10-08	Silt	45	%			
EPA SI	Nearshore north	771	DR205-0000	SD-DR205-0000	Silt	72	%	J		
EPA SI	Nearshore north	793	DR227-0000	SD-DR227-0000	Silt	70	%	J		
NOAA	Nearshore south	249	WIT07-02	WIT07-02	Silt	30	%			
NOAA	Nearshore south	250	WIT07-03	WIT07-03	Silt	3.1	%			
EPA SI	Nearshore south	775	DR209-0000	SD-DR209-0000	Silt	8.5	%			
EPA SI	Nearshore south	776	DR210-0000	SD-DR210-0000	Silt	52	%			
Boeing	Nearshore south	894	SD0018	SD0018	Silt	32	%			
Boeing	Nearshore south	895	SD0019	SD0019	Silt	71	%			
Boeing	Nearshore south	897	SD0012	SD0012	Silt	42	%			
Boeing	Nearshore south	898	SD0009	SD0009	Silt	66	%			
NOAA	T-117 EAA	248	WIT07-01	WIT07-01	Silt	5.6	%			
NOAA	T-117 EAA	301	WST09-02	WST09-02	Silt	54	%			
EPA SI	T-117 EAA	772	DR206-0000	SD-DR206-0000	Silt	79	%	J		
EPA SI	T-117 EAA	773	DR207-0000	SD-DR207-0000	Silt	22	%			
EPA SI	T-117 EAA	774	DR208-0000	SD-DR208-0000	Silt	38	%			
Boeing	T-117 EAA	892	SD0011	SD0011	Silt	71	%			
Boeing	T-117 EAA	893	SD0010	SD0010	Silt	70	%			
Total solids a	re wet weight				Q - Qualifiers					
dw - Dry weight	-				J - Estimate					-
OC - Organic ca	arbon normalized				U - Undetect					
DET - Detected	-									
Bold values in	dicate SQS exceeda	nce								
Bold and italic	ized values incicate	CSL exceed	ance							



APPENDIX B: CHEMISTRY RESULTS FROM CURRENT SUBSURFACE SEDIMENT

FINAL

					Surface (0-4 ft) Sedii					
Event	Location Number	Sample ID	Depth horizon	Parameter group	Parameter	Value	Unit	Q	Value OC	Unit OC
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Aluminum	22300	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Antimony	10	mg/kg	UJ		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Arsenic	7.0	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Barium	73	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Cadmium	0.39	mg/kg	J		
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	Metals Metals	Chromium Cobalt	29 10	mg/kg mg/kg	J		
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	Metals	Copper	50	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Dibutyltin as ion	15	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Iron	28600	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Lead	32	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Manganese	282	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Mercury	0.20	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	n-Butyltin	5.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Nickel	20	mg/kg	J		
EPA SI EPA SI	772 772	SD-DR206-0000A	0-2 ft 0-2 ft	Metals Metals	Silver	0.33 15	mg/kg	J		
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	Metals	Tetrabutyltin as ion Tin	5.0	ug/kg mg/kg	J		
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	Metals	Tributyltin as ion	23	ug/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Vanadium	65	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Metals	Zinc	113	mg/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	4,4'-DDD	2.0	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	4,4'-DDE	2.0	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	4,4'-DDT	3.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	Aldrin	1.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	alpha-BHC	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	alpha-Chlordane	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	alpha-Endosulfan	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	beta-BHC	2.0	ug/kg	U		-
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	Pesticides Pesticides	beta-Endosulfan DDTs (total-calc'd)	2.0	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	Pesticides	Dieldrin	2.0	ug/kg ug/kg	UJ		
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	Pesticides	Endosulfan sulfate	2.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	Endrin	2.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	Endrin aldehyde	25	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	Endrin ketone	2.0	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	gamma-BHC	1.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	gamma-Chlordane	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	Heptachlor	1.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	Heptachlor epoxide	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	Pesticides	Methoxychlor	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	Pesticides	Toxaphene Aroclor-1016	10	ug/kg	U		
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	PCBs PCBs	Aroclor-1221	20 40	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	Aroclor-1232	20	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	Aroclor-1242	110	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	Aroclor-1248	20	ug/kg	U		
EPA SI	772	SD-DR206-0000A		PCBs	Aroclor-1254	462	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	Aroclor-1260	678	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-101	34	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-105	8.0	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-114	2.0	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-118	22	ug/kg			
EPA SI EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-123	4.0	ug/kg	U		
EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	PCBs PCBs	PCB-126 PCB-128	1.0 8.0	ug/kg ug/kg	U		-
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	PCBs	PCB-128	8.0	ug/kg ug/kg			
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	PCBs	PCB-153	72	ug/kg			<u> </u>
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-156	6.0	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-157	1.0	ug/kg	U		1
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-167	2.0	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-169	1.0	ug/kg	J		
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-170	29	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-18	7.0	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-180	53	ug/kg			<u> </u>
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-187	28	ug/kg			<u> </u>
EPA SI	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-189	1.0	ug/kg	U		1
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	PCBs PCBs	PCB-195 PCB-206	6.0 3.0	ug/kg			-
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	PCBs	PCB-28	9.0	ug/kg ug/kg			1
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	PCBs	PCB-44	12	ug/kg ug/kg			
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	PCBs	PCB-55	29	ug/kg			<u> </u>
EFASI						36	ug/kg			t
	772	SD-DR206-0000A	0-2 ft	PCBs	PCB-66	30	uq/ku			
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	PCBs PCBs	PCB-66 PCB-77	1.0	ug/kg	U		
EPA SI							,	U		



					, ,					
Event	Location Number	Sample ID	Depth horizon	Parameter group	Parameter	Value	Unit	Q	Value OC	Unit OC
EPA SI	772	SD-DR206-0000A	0-2 ft	HPAHs	Benzo(a)anthracene	210	ug/kg		27	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	HPAHs	Benzo(a)pyrene	230	ug/kg		29	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	HPAHs	Benzo(g,h,i)perylene	130	ug/kg		16	mg/kg OC
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	HPAHs HPAHs	Benzofluoranthenes (total) Chrysene	540 300	ug/kg ug/kg		68 38	mg/kg OC mg/kg OC
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	HPAHs	Dibenzo(a,h)anthracene	40	ug/kg ug/kg		5.1	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	HPAHs	Fluoranthene	440	ug/kg		56	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	HPAHs	Indeno(1,2,3-cd)pyrene	190	ug/kg		24	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	HPAHs	Pyrene	600	ug/kg		76	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	HPAHs	Total HPAH (calc'd)	2680	ug/kg		339	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	LPAHs	Acenaphthene	20	ug/kg	U	3	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	LPAHs	Acenaphthylene	20	ug/kg	U	3	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	LPAHs	Anthracene	40	ug/kg		5	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	LPAHs	Fluorene	20	ug/kg	U	3	mg/kg OC
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	LPAHs LPAHs	Naphthalene Phenanthrene	20 160	ug/kg ug/kg	U	3 20	mg/kg OC mg/kg OC
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	LPAHs	Total LPAH (calc'd)	200	ug/kg ug/kg		25	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	1,3-Dichlorobenzene	20	ug/kg	U	20	mg/kg 00
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	2,4-Dichlorophenol	60	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	2,4-Dinitrophenol	300	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	2,4-Dinitrotoluene	200	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	2,6-Dinitrotoluene	200	ug/kg	U		
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	SVOCs SVOCs	2-Chloronaphthalene 2-Chlorophenol	20	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	SVOCs	2-Methylphenol	20	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	2-Nitroaniline	100	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	2-Nitrophenol	100	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	3,3'-Dichlorobenzidine	200	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	3-Nitroaniline	200	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	4-Chloroaniline	60	ug/kg	U		
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	SVOCs SVOCs	4-Chlorophenyl phenyl ether 4-Nitroaniline	20 100	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	SVOCs	4-Nitrophenol	100	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Benzoic acid	300	ug/kg			
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Benzyl alcohol	50	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	bis(2-chloroisopropyl)ether	40	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Bis(2-ethylhexyl)phthalate	520	ug/kg		66	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Butyl benzyl phthalate	40	ug/kg		5.1	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Carbazole	30	ug/kg		0.5	
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	SVOCs SVOCs	Dibenzofuran Diethyl phthalate	20 20	ug/kg ug/kg	U	2.5	mg/kg OC mg/kg OC
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	SVOCs	Dimethyl phthalate	20	ug/kg ug/kg	U	2.5	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Di-n-butyl phthalate	20	ug/kg	U	2.5	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Di-n-octyl phthalate	20	ug/kg	U	2.5	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Hexachlorobenzene	20	ug/kg	U	2.5	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Hexachlorobutadiene	20	ug/kg	U	2.5	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Hexachlorocyclopentadiene	100	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Hexachloroethane	20	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Isophorone	20	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Nitrobenzene	20	ug/kg	U		
EPA SI EPA SI	772 772	SD-DR206-0000A SD-DR206-0000A	0-2 ft 0-2 ft	SVOCs SVOCs	N-Nitroso-di-n-propylamine N-Nitrosodiphenylamine	40 40	ug/kg	U	5.1	ma/ka OC
EPA SI	772	SD-DR206-0000A SD-DR206-0000A	0-2 ft	SVOCs	Pentachlorophenol	300	ug/kg ug/kg	U	5.1	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	Phenol	20	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	SVOCs	3 and 4-Methylphenol Coelution	20	ug/kg	U		
EPA SI	772	SD-DR206-0000A	0-2 ft	VOCs	1,2,4-Trichlorobenzene	20	ug/kg	U	2.5	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	VOCs	1,2-Dichlorobenzene	20	ug/kg	U	2.5	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	VOCs	1,4-Dichlorobenzene	20	ug/kg	U	2.5	mg/kg OC
EPA SI	772	SD-DR206-0000A	0-2 ft	Conventionals	Total Organic Carbon (TOC)	0.79	%			
EPA SI	772	SD-DR206-0000A	0-2 ft	Grain size	Clay	12	%			
EPA SI	772	SD-DR206-0000A	0-2 ft	Grain size	Fines (percent silt+clay)	79	%			
EPA SI	772	SD-DR206-0000A	0-2 ft	Grain size	Rocks	0.01	%			
EPA SI	772	SD-DR206-0000A	0-2 ft	Grain size	Sand	21	%			
EPA SI	772	SD-DR206-0000A	0-2 ft	Grain size	Silt	67	% ma/ka			
EPA SI EPA SI	772 772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	Metals Metals	Aluminum Antimony	22100 10	mg/kg mg/kg	U		
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 π 2-4 ft	Metals	Arsenic	8.0	mg/kg mg/kg	U		
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft	Metals	Barium	91	mg/kg			
	2	55 BILEGO 0020	11			01	g/ng		L	1



					Surface (0-4 ft) Sedime					
Event	Location Number	Sample ID	Depth horizon	Parameter group	Parameter	Value	Unit	Q	Value OC	Unit OC
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Cadmium	0.74	mg/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Chromium	30	mg/kg			
EPA SI EPA SI	772 772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	Metals Metals	Cobalt Copper	9.0 53	mg/kg mg/kg			
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft	Metals	Dibutyltin as ion	7.0	ug/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Iron	28600	mg/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Lead	48	mg/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Manganese	276	mg/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Mercury	0.20	mg/kg			
EPA SI EPA SI	772 772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	Metals Metals	n-Butyltin Nickel	5.0 18	ug/kg mg/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Silver	0.54	mg/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Tetrabutyltin as ion	15	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Tin	6.0	mg/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Tributyltin as ion	13	ug/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	Metals	Vanadium	65	mg/kg			
EPA SI EPA SI	772 772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	Metals Pesticides	Zinc 4,4'-DDD	120 3.0	mg/kg ug/kg			
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft	Pesticides	4,4'-DDE	7.0	ug/kg ug/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	4,4'-DDT	5.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	Aldrin	1.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	alpha-BHC	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	alpha-Chlordane	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	alpha-Endosulfan	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	beta-BHC	1.0	ug/kg	U		
EPA SI EPA SI	772 772	SD-DR206-0020	2-4 ft	Pesticides	beta-Endosulfan DDTs (total-calc'd)	2.0	ug/kg	U		
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	Pesticides Pesticides	Dieldrin	10 2.0	ug/kg ug/kg	UJ		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	Endosulfan sulfate	2.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	Endrin	2.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	Endrin aldehyde	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	Endrin ketone	2.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	gamma-BHC	1.0	ug/kg	UJ		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	gamma-Chlordane	2.0	ug/kg	U		
EPA SI EPA SI	772 772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	Pesticides Pesticides	Heptachlor Heptachlor epoxide	1.0 3.0	ug/kg ug/kg	UJ		
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft	Pesticides	Methoxychlor	1.0	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	Pesticides	Toxaphene	10	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	Aroclor-1016	20	ug/kg	Ū		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	Aroclor-1221	40	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	Aroclor-1232	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	Aroclor-1242	20	ug/kg	U		
EPA SI EPA SI	772 772	SD-DR206-0020	2-4 ft	PCBs PCBs	Arcelor 1254	20	ug/kg	U		
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	PCBs	Aroclor-1254 Aroclor-1260	20	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-101	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-105	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-114	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-118	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-123	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-126	1.0	ug/kg	U		
EPA SI EPA SI	772 772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	PCBs PCBs	PCB-128 PCB-138	1.0	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft	PCBs	PCB-153	1.0	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-156	1.0	ug/kg	U		<u> </u>
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-157	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-167	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-169	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-170	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-18	1.0	ug/kg	U		
EPA SI EPA SI	772 772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	PCBs PCBs	PCB-180 PCB-187	1.0	ug/kg ug/kg	U		-
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft	PCBs	PCB-189	1.0	ug/kg ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-195	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-206	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-28	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-44	1.0	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-55	1.0	ug/kg	U		1
EPA SI	772	SD-DR206-0020	2-4 ft	PCBs	PCB-66	1.0	ug/kg	U		1
EPA SI EPA SI	772 772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	PCBs PCBs	PCB-77 PCB-81	1.0	ug/kg ug/kg	U		-
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft	PCBs	PCBs (total calc'd)	40	ug/kg ug/kg	U	1.6	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	HPAHs	Benzo(a)anthracene	180	ug/kg		7.3	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	HPAHs	Benzo(a)pyrene	150	ug/kg		6.1	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	HPAHs	Benzo(g,h,i)perylene	80	ug/kg		3.3	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	HPAHs	Benzofluoranthenes (total-calc'd)	350	ug/kg		14	mg/kg OC



EVENT EPA SI EPA SI EPA SI EPA SI EPA SI	Number 772	Sample ID			Danconton	1/	110-14	_	00	Unit
EPA SI EPA SI	1/2	OD DD000 0000	horizon	group	Parameter	Value	Unit	Q	OC	ОС
EPA SI		SD-DR206-0020	2-4 ft	HPAHs	Chrysene	260	ug/kg		11	mg/kg OC
	772 772	SD-DR206-0020	2-4 ft	HPAHs	Dibenzo(a,h)anthracene	30	ug/kg		1.2	mg/kg OC
		SD-DR206-0020	2-4 ft	HPAHs	Fluoranthene	470	ug/kg		19	mg/kg OC
EPA SI	772 772	SD-DR206-0020	2-4 ft 2-4 ft	HPAHs HPAHs	Indeno(1,2,3-cd)pyrene Pyrene	120 420	ug/kg		4.9 17.1	mg/kg OC mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft		,		ug/kg		84.1	
EPA SI	772	SD-DR206-0020		HPAHs LPAHs	Total HPAH (calc'd) Acenaphthene	2060	ug/kg	U	0.8	mg/kg OC
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	LPAHS	<u>'</u>	20	ug/kg	U	0.8	mg/kg OC
EPA SI	772			LPAHS	Acenaphthylene Anthracene	50	ug/kg	U	2.0	mg/kg OC
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft 2-4 ft	LPAHS	Fluorene	20	ug/kg		0.8	mg/kg OC
EPA SI	772		2-4 ft	LPAHS		20	ug/kg	U	0.8	mg/kg OC
		SD-DR206-0020			Naphthalene		ug/kg	U		mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	LPAHs	Phenanthrene	160	ug/kg		6.5	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	LPAHs	Total LPAH (calc'd)	230	ug/kg		9.4	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2,4-Dichlorophenol	60	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2,4-Dinitrophenol	200	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2,4-Dinitrotoluene	200	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2,6-Dinitrotoluene	200	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2-Chloronaphthalene	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2-Chlorophenol	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2-Methylphenol	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2-Nitroaniline	100	ug/kg	J		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	2-Nitrophenol	100	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	3,3'-Dichlorobenzidine	200	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	3-Nitroaniline	200	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	4-Chloroaniline	60	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	4-Chlorophenyl phenyl ether	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	4-Nitroaniline	100	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	4-Nitrophenol	100	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Benzoic acid	300	ug/kg			
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Benzyl alcohol	50	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	bis(2-chloroisopropyl)ether	40	ug/kg	U		
EPA SI	772	SD-DR206-0020 SD-DR206-0020	2-4 ft	SVOCs		350		U	14	mg/kg OC
EPA SI	772		2-4 ft	SVOCs	Bis(2-ethylhexyl)phthalate	30	ug/kg		1.2	mg/kg OC
		SD-DR206-0020 SD-DR206-0020		SVOCs	Butyl benzyl phthalate	_	ug/kg		1.2	mg/kg OC
EPA SI	772		2-4 ft		Carbazole	20	ug/kg		0.00	
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Dibenzofuran	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Diethyl phthalate	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Dimethyl phthalate	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Di-n-butyl phthalate	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Di-n-octyl phthalate	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Hexachlorobenzene	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Hexachlorobutadiene	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Hexachlorocyclopentadiene	100	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Hexachloroethane	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Isophorone	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Nitrobenzene	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	N-Nitroso-di-n-propylamine	40	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	N-Nitrosodiphenylamine	40	ug/kg	U	1.6	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Pentachlorophenol	100	ug/kg	J		L
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	Phenol	20	ug/kg	J		
EPA SI	772	SD-DR206-0020	2-4 ft	SVOCs	3 and 4-Methylphenol Coelution	20	ug/kg	U		
EPA SI	772	SD-DR206-0020	2-4 ft	VOCs	1,2,4-Trichlorobenzene	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	VOCs	1,2-Dichlorobenzene	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	VOCs	1,4-Dichlorobenzene	20	ug/kg	U	0.82	mg/kg OC
EPA SI	772	SD-DR206-0020	2-4 ft	Conventionals	Total Organic Carbon (TOC)	2.5	%			
EPA SI	772	SD-DR206-0020	2-4 ft	Grain size	Clay	9.9	%			
EPA SI	772	SD-DR206-0020	2-4 ft	Grain size	Fines (percent silt+clay)	77	%			
EPA SI	772	SD-DR206-0020	2-4 ft	Grain size	Rocks	0.01	%			
EPA SI	772	SD-DR206-0020	2-4 ft	Grain size	Sand	23	%			
EPA SI	772	SD-DR206-0020	2-4 ft	Grain size	Silt	67	%			+
51	2		11	J. G 0120			,,,			
dw - Dry weight					Q - Qualifiers	-				-
OC - Organic ca		zed			J - Estimate	-				-
oo - organic ca		20U			U - Undetect					
DET - Dotootod					U - Unidelect					
DET - Detected Bold values inc	dianta coc -	vooodonoo								



APPENDIX C: CHEMISTRY RESULTS FROM DREDGED SURFACE SEDIMENT

FINAL

1	1	dredged se	aiment	1				1		
	Location	SedQual Sample		Depth			Unit		Value	Unit
Event	Number	ID	Sample ID	Horizon	Parameter	Value	dw	Q	ОС	OC dw
					Metals					
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000		Aluminum	28000	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000		Aluminum	23600	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000		Aluminum	21800	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000		Aluminum	19900	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Aluminum	21000	mg/kg			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Antimony	0.47	mg/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Antimony	0.49	mg/kg			
PSSDA98	6642	S1	S1	0-2 ft	Antimony	4.0	mg/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Antimony	5.0	mg/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		Antimony	10	mg/kg	UJ		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Antimony	10	mg/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Antimony	10	mg/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000		Antimony	10	mg/kg	U		
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Arsenic	9.0	mg/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Arsenic	16	mg/kg			
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Arsenic	8.5	mg/kg			
PSSDA98	6642	S1	S1	0-2 ft	Arsenic	9.0	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Arsenic	11	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Arsenic	11	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Arsenic	7.7	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Arsenic	14.1	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Arsenic	10	mg/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Barium	88	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Barium	82	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Barium	71	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Barium	70	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Barium	69	mg/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Cadmium	0.80	mg/kg			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Cadmium	2	mg/kg			
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Cadmium	1	mg/kg			
PSSDA98	6642	S1	S1	0-2 ft	Cadmium	0.40	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Cadmium	0.40	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Cadmium	0.30	mg/kg	UJ		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Cadmium	0.40	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Cadmium	0.33	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Cadmium	0.30	mg/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Chromium	34	mg/kg	J		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Chromium	31	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Chromium	29	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Chromium	24	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Chromium	27	mg/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Cobalt	11	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Cobalt	10	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Cobalt	10	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Cobalt	9.0	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Cobalt	9.0	mg/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Copper	46	mg/kg	J		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Copper	49	mg/kg			
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Copper	40	mg/kg			
PSSDA98	6642	S1	S1	0-2 ft	Copper	25	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Copper	42.6	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Copper	47	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Copper	39	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000		Copper	43	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000		Copper	39	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000		Dibutyltin as ion	5.0	ug/kg	U		
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm		32000	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm		32100	mg/kg	J		
				0-10 cm		28400	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 CIII	11011	20100				
EPA SI	795 796	DR229-0000 DR230-0000	SD-DR229-0000 SD-DR230-0000		Iron	27600	mg/kg			
				0-10 cm						
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Iron	27600	mg/kg			



	ı	dredged se	aiment			1	1		1	
Event	Location Number	SedQual Sample	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
SP Marina	6629	SOPARK91C002	•	0-4 ft	Lead	31	mg/kg			
PSSDA98	6642	S1	S1	0-2 ft	Lead	32	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Lead	22	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Lead	24	mg/kg	J		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Lead	17	mg/kg	J		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Lead	20	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Lead	19	mg/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Manganese	360	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Manganese	334	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Manganese	305	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Manganese	297	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Manganese	299	mg/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Mercury	0.12	mg/kg			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Mercury	0	mg/kg			
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Mercury	0	mg/kg			
PSSDA98	6642	S1	S1	0-2 ft	Mercury	0.12	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Mercury	0.02	mg/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Mercury	0.15	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Mercury	0.13	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Mercury	0.13	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Mercury	0.13	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000		n-Butyltin	8.0	ug/kg	J		
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Nickel	27	mg/kg			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Nickel	47	mg/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Nickel	45	mg/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Nickel	21.9	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Nickel	26	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Nickel	23	mg/kg	J		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Nickel	22	mg/kg	J		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Nickel	19	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Nickel	22	mg/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Silver	0.60	mg/kg			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Silver	1	mg/kg			
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Silver	1	mg/kg			
PSSDA98	6642	S1	S1	0-2 ft	Silver	0.3	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Silver	0.5	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Silver	0.19	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Silver	0.23	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Silver	0.31	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Silver	0.16	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000		Tetrabutyltin as ion	5.0	ug/kg	UJ		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm		4.0	mg/kg	UJ		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm		5.0	mg/kg	- 00		
EPA SI	796	DR230-0000	SD-DR230-0000	1	Tin	3.0	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Tin	4.0	mg/kg	UJ		
PSSDA98	6642	S1	S1	0-2 ft	Tributyltin (interstitial water)	0.02	ug/L	U		
PSSDA98	6643	S2	S2	0-2 ft	Tributyltin (interstitial water)	0.02	ug/L	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Tributyltin as ion	19	ug/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Vanadium	78	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Vanadium	74	mg/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Vanadium	70	mg/kg			
EPA SI	796	DR230-0000	SD-DR230-0000		Vanadium	58	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000		Vanadium	65	mg/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Zinc	100	mg/kg			
SP Marina	6627	SOPARK91C001	Comp 1	0-10 cm	Zinc	100	mg/kg			
SP Marina	6629	SOPARK91C001	Comp 2	0-4 ft	Zinc	89	mg/kg			
PSSDA98	6642	S1	S1	0-4 ft	Zinc	75.2	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Zinc	91.4	mg/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Zinc	101	mg/kg			
EPA SI	794	DR229-0000	SD-DR229-0000 SD-DR229-0000		Zinc	85	mg/kg			
EPA SI	795	DR229-0000 DR230-0000	SD-DR229-0000 SD-DR230-0000	0-10 cm	Zinc	90	mg/kg			
EPA SI	801	DR235-0000	SD-DR235-0000 SD-DR235-0000	0-10 cm	Zinc	85	mg/kg			
LIASI	001	DIVEOU-0000	OD-DIV500-0000	0-10 CH	Pesticides	υü	mg/kg			
SD Marina	6627	SUBVENIOUS	Comp 1	0-4 ft	4,4'-DDD	2.0	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comb i	U-4 II	4,4-000	2.0	ug/kg	U		



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	4,4'-DDD	2.0	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	4,4'-DDD	2.0	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	4,4'-DDD	1.1	ug/kg			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	4,4'-DDE	2.0	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	4,4'-DDE	2.0	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	4,4'-DDE	2.0	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	4,4'-DDE	1.9	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	4,4'-DDT	2.0	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	4,4'-DDT	2.0	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	4,4'-DDT	2.0	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	4,4'-DDT	1.9	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Aldrin	2.0	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Aldrin	2.0	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Aldrin	1.0	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Aldrin	0.96	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Chlordane	2.0	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Chlordane	2.0	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Chlordane	2.3	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Chlordane	3.0	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	DDTs (total-calc'd)	2.0	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	DDTs (total-calc'd)	2.0	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	DDTs (total-calc'd)	2.0	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	DDTs (total-calc'd)	1.9	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Dieldrin	2.0	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Dieldrin	2.0	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Dieldrin	2.0	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Dieldrin	2.0	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Gamma-BHC	2.0	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Gamma-BHC	2.0	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Heptachlor	2.0	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Heptachlor	2.0	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Heptachlor	1.0	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Heptachlor	1.0	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Lindane	1.0	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Lindane	1.0	ug/kg	U		
. 6627.66	00.10	02	02	0 2	PCBs	1.0	ug/ng	_		
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Aroclor-1016	66	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Aroclor-1016	10	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Aroclor-1016	10	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Aroclor-1016	20	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Aroclor-1016	19	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		Aroclor-1016	20	ug/kg	UJ		
EPA SI	795	DR229-0000	SD-DR229-0000		Aroclor-1016	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000		Aroclor-1016	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Aroclor-1016	20	ug/kg	UJ		
SP Marina	6627	SOPARK91C001	Comp 1	0-10 cm	Aroclor-1221	10	ug/kg	U		
SP Marina	6629	SOPARK91C001	Comp 2	0-4 ft	Aroclor-1221	10	ug/kg ug/kg	U		
PSSDA98	6642	S1	S1	0-4 ft	Aroclor-1221	40	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Aroclor-1221	39	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Aroclor-1221	40	ug/kg ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000 SD-DR229-0000	0-10 cm	Aroclor-1221	40	ug/kg ug/kg	U		
EPA SI	795	DR229-0000 DR230-0000	SD-DR229-0000 SD-DR230-0000		Aroclor-1221	40	ug/kg ug/kg	U		
EPA SI	801	DR235-0000	SD-DR230-0000 SD-DR235-0000	1	Aroclor-1221	40		U		
SP Marina	6627	SOPARK91C001	Comp 1	0-10 cm	Aroclor-1221 Aroclor-1232	10	ug/kg ug/kg	U		
SP Marina	6629	SOPARK91C001	Comp 1	0-4 ft	Aroclor-1232	10	ug/kg ug/kg	U		
PSSDA98	6642	S1	S1	0-4 ft	Aroclor-1232	20	ug/kg ug/kg	U		
PSSDA98		S2	S2	0-2 ft	Aroclor-1232	19		U		
	6643						ug/kg	U		
EPA SI EPA SI	794 795	DR228-0000 DR229-0000	SD-DR228-0000 SD-DR229-0000		Aroclor-1232 Aroclor-1232	20	ug/kg	U		
							ug/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	1	Aroclor 1232	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000		Aroclor-1232	20	ug/kg	U		
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Aroclor-1242	66	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Aroclor-1242	10	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Aroclor-1242	10	ug/kg	U		



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Forms	Location Number	SedQual Sample	Samula ID	Depth	Deservator	Value	Unit		Value OC	Unit OC dw
Event			Sample ID	Horizon	Parameter 1040	Value	dw	Q	UC	OC dw
PSSDA98	6642	S1	S1	0-2 ft	Aroclor-1242	20	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Aroclor-1242	19	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Aroclor-1242	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Aroclor-1242	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Aroclor-1242	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Aroclor-1242	20	ug/kg	U		
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Aroclor-1248	66	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Aroclor-1248	10	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Aroclor-1248	10	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Aroclor-1248	20	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Aroclor-1248	19	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Aroclor-1248	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Aroclor-1248	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Aroclor-1248	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Aroclor-1248	20	ug/kg	U		
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Aroclor-1254	92	ug/kg	_		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Aroclor-1254	56	ug/kg			
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Aroclor-1254	32	ug/kg			
PSSDA98	6642	S1	S1	0-4 ft	Aroclor-1254	13				
PSSDA98	6643	S2	S2	0-2 ft	Aroclor-1254	23	ug/kg			
							ug/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Aroclor-1254	64	ug/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Aroclor-1254	22	ug/kg			
EPA SI	796	DR230-0000	SD-DR230-0000		Aroclor-1254	50	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Aroclor-1254	41	ug/kg			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Aroclor-1260	46	ug/kg	J		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Aroclor-1260	10	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Aroclor-1260	10	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Aroclor-1260	22	ug/kg			
PSSDA98	6643	S2	S2	0-2 ft	Aroclor-1260	32	ug/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Aroclor-1260	97	ug/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Aroclor-1260	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Aroclor-1260	36	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Aroclor-1260	34	ug/kg			
NOAA	25	CH03-01	CH03-01	0-10 cm	PCB-101	21	ug/kg	J		
NOAA	26	CH03-02	CH03-02	0-10 cm	PCB-101	6.5	ug/kg	J		
NOAA	27	CH03-03	CH03-03	0-10 cm	PCB-101	8.9	ug/kg	J		
NOAA	28	CH03-04	CH03-04	0-10 cm	PCB-101	6.2	ug/kg	J		
NOAA	296	WST08-01	WST08-01		PCB-101	6.8	ug/kg	J		
NOAA	297	WST08-02	WST08-02		PCB-101	11	ug/kg	J		
NOAA	298	WST08-02	WST08-02 WST08-03		PCB-101	16	ug/kg	J		
NOAA	299	WST08-04	WST08-03		PCB-101	19	ug/kg	J		
								J		
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-101	2.0	ug/kg			
EPA SI	795	DR229-0000	SD-DR229-0000		PCB-101	2.0	ug/kg	J		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-101	3.0	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-101	3.0	ug/kg	J		
NOAA	25	CH03-01	CH03-01		PCB-105	4.6	ug/kg			
NOAA	26	CH03-02	CH03-02	1	PCB-105	1.6	ug/kg	U		
NOAA	27	CH03-03	CH03-03	1	PCB-105	2.4	ug/kg			
NOAA	28	CH03-04	CH03-04		PCB-105	5.5	ug/kg			
NOAA	296	WST08-01	WST08-01	0-10 cm	PCB-105	1.9	ug/kg			
NOAA	297	WST08-02	WST08-02	0-10 cm	PCB-105	1.5	ug/kg			
NOAA	298	WST08-03	WST08-03	0-10 cm	PCB-105	2.5	ug/kg			
NOAA	299	WST08-04	WST08-04	0-10 cm	PCB-105	3.2	ug/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-105	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-105	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCB-105	1.0	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-105	1.0	ug/kg	UJ		
NOAA	25	CH03-01	CH03-01		PCB-110	7.9	ug/kg			
NOAA	26	CH03-02	CH03-02		PCB-110	1.9	ug/kg			
NOAA	27	CH03-03	CH03-03		PCB-110	2.6	ug/kg			
NOAA	28	CH03-04	CH03-04		PCB-110	2.3	ug/kg			
NOAA	296	WST08-01	WST08-01	1	PCB-110	2.0	ug/kg			
NOAA	296	WST08-02	WST08-02	1	PCB-110	2.0	ug/kg ug/kg			
				1						
NOAA	298	WST08-03	WST08-03	U-10 CM	PCB-110	5.4	ug/kg			



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
NOAA	299	WST08-04	WST08-04	0-10 cm	PCB-110	5.1	ug/kg			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-114	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-114	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCB-114	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-114	1.0	ug/kg	UJ		
NOAA	25	CH03-01	CH03-01	0-10 cm	PCB-118	10	ug/kg			
NOAA	26	CH03-02	CH03-02	0-10 cm	PCB-118	1.6	ug/kg	U		
NOAA	27	CH03-03	CH03-03		PCB-118	3.4	ug/kg			
NOAA	28	CH03-04	CH03-04		PCB-118	3.3	ug/kg			
NOAA	296	WST08-01	WST08-01		PCB-118	3.3	ug/kg			
NOAA	297	WST08-02	WST08-02		PCB-118	3.6	ug/kg			
NOAA	298	WST08-03	WST08-03		PCB-118	6.1	ug/kg			
NOAA	299	WST08-04	WST08-04		PCB-118	6.2	ug/kg			
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-118	2.0	ug/kg			
EPA SI	795	DR229-0000	SD-DR229-0000		PCB-118	1.0	ug/kg	J		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-118	3.0	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-118	3.0	ug/kg	J		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-123	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		PCB-123	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-123	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-123	1.0	ug/kg	UJ		
NOAA	25	CH03-01	CH03-01		PCB-126	0.44	ug/kg	U		
NOAA	26	CH03-02	CH03-02		PCB-126	1.8	ug/kg	U		
NOAA	27	CH03-03	CH03-03		PCB-126	0.73	ug/kg	U		
NOAA	28	CH03-04	CH03-04		PCB-126	1.3	ug/kg	U		
NOAA	296	WST08-01	WST08-01		PCB-126	0.31	ug/kg	U		
NOAA	297	WST08-02	WST08-02	0-10 cm	PCB-126	0.25	ug/kg	U		
NOAA	298	WST08-03	WST08-03	0-10 cm	PCB-126	0.41	ug/kg	U		
NOAA	299	WST08-04	WST08-04		PCB-126	0.41	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-126	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-126	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-126	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-126	1.0	ug/kg	UJ		
NOAA	25	CH03-01	CH03-01	0-10 cm	PCB-128	5.1	ug/kg	J		
NOAA	26	CH03-02	CH03-02		PCB-128	1.8	ug/kg	U		
NOAA	27	CH03-03	CH03-03		PCB-128	2.7	ug/kg	J		
NOAA	28	CH03-04	CH03-04	0-10 cm	PCB-128	2.7	ug/kg	J		
NOAA	296	WST08-01	WST08-01		PCB-128	1.7	ug/kg	U		
NOAA	297	WST08-02	WST08-02		PCB-128	2.2	ug/kg	U		
NOAA	298	WST08-03	WST08-03		PCB-128	4.2	ug/kg	U		
NOAA	299	WST08-04	WST08-04		PCB-128	3.5	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-128	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		PCB-128	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-128	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-128	1.0	ug/kg	UJ		
NOAA	25	CH03-01	CH03-01		PCB-138	6.1	ug/kg			
NOAA	26	CH03-02	CH03-02		PCB-138	1.8	ug/kg			
NOAA	27	CH03-03	CH03-03		PCB-138	1.5	ug/kg			
NOAA	28	CH03-04	CH03-04		PCB-138	1.6	ug/kg			
NOAA	296	WST08-01	WST08-01		PCB-138	1.8	ug/kg			
NOAA	297	WST08-02	WST08-02		PCB-138	2.7	ug/kg			
NOAA	298	WST08-03	WST08-03		PCB-138	4.0	ug/kg			
NOAA	299	WST08-04	WST08-04		PCB-138	4.2	ug/kg			
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-138	3.0	ug/kg			
EPA SI	795	DR229-0000	SD-DR229-0000		PCB-138	2.0	ug/kg	J		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-138	5.0	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-138	6.0	ug/kg			
NOAA	25	CH03-01	CH03-01		PCB-153	16	ug/kg	J		
NOAA	26	CH03-02	CH03-02	0-10 cm	PCB-153	1.7	ug/kg	U		
NOAA	27	CH03-03	CH03-03		PCB-153	6.0	ug/kg	J		
NOAA	28	CH03-04	CH03-04	0-10 cm	PCB-153	4.0	ug/kg	J		
NOAA	296	WST08-01	WST08-01	0-10 cm	PCB-153	5.0	ug/kg	J		
NOAA	297	WST08-02	WST08-02	0-10 cm	PCB-153	7.2	ug/kg	J	1 Т	
NOAA	291	VVO100 02	WST08-03		PCB-153	1.2	ug/kg	Ü		



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
NOAA	299	WST08-04	WST08-04	0-10 cm	PCB-153	13	ug/kg	J		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-153	2.0	ug/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-153	2.0	ug/kg	J		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCB-153	4.0	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-153	4.0	ug/kg	J		
NOAA	25	CH03-01	CH03-01	0-10 cm	PCB-156	0.38	ug/kg	U		
NOAA	26	CH03-02	CH03-02	0-10 cm	PCB-156	1.6	ug/kg	U		
NOAA	27	CH03-03	CH03-03	0-10 cm	PCB-156	0.64	ug/kg	U		
NOAA	28	CH03-04	CH03-04	0-10 cm	PCB-156	1.2	ug/kg	U		
NOAA	296	WST08-01	WST08-01	0-10 cm	PCB-156	0.27	ug/kg	U		
NOAA	297	WST08-02	WST08-02	0-10 cm	PCB-156	0.22	ug/kg	U		
NOAA	298	WST08-03	WST08-03	0-10 cm	PCB-156	0.36	ug/kg	U		
NOAA	299	WST08-04	WST08-04	0-10 cm	PCB-156	0.36	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-156	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		PCB-156	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCB-156	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-156	1.0	ug/kg	UJ		
NOAA	25	CH03-01	CH03-01	0-10 cm	PCB-157	0.33	ug/kg	U		
NOAA	26	CH03-02	CH03-02		PCB-157	1.4	ug/kg	U		
NOAA	27	CH03-03	CH03-03		PCB-157	0.56	ug/kg	U		
NOAA	28	CH03-04	CH03-04		PCB-157	1.0	ug/kg	U		
NOAA	296	WST08-01	WST08-01		PCB-157	0.24	ug/kg	U		
NOAA	297	WST08-02	WST08-02	0-10 cm	PCB-157	0.20	ug/kg	U		
NOAA	298	WST08-03	WST08-03		PCB-157	0.32	ug/kg	U		
NOAA	299	WST08-04	WST08-04		PCB-157	0.32	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-157	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		PCB-157	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-157	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-157	1.0	ug/kg	UJ		
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-167	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-167	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCB-167	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-167	1.0	ug/kg	UJ		
NOAA	25	CH03-01	CH03-01		PCB-169	1.1	ug/kg	U		
NOAA	26	CH03-01	CH03-02		PCB-169	4.4	ug/kg	U		
NOAA	27	CH03-03	CH03-03		PCB-169	1.8	ug/kg	U		
NOAA	28	CH03-04	CH03-04		PCB-169	3.2	ug/kg	U		
NOAA	296	WST08-01	WST08-01		PCB-169	0.75	ug/kg	U		
NOAA	297	WST08-02	WST08-02	0-10 cm	PCB-169	0.62	ug/kg	U		
NOAA	297	WST08-02	WST08-02		PCB-169	1.0	ug/kg ug/kg	U		
NOAA	299	WST08-04	WST08-04		PCB-169	1.0	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-169	1.0	ug/kg	U		
EPA SI	1	DR229-0000	SD-DR229-0000 SD-DR229-0000		PCB-169	1.0		U		
EPA SI	795 796	DR230-0000	SD-DR230-0000		PCB-169	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000 SD-DR235-0000		PCB-169	1.0	ug/kg	UJ		
NOAA		CH03-01					ug/kg	UJ		
	25		CH03-01		PCB-170	1.6	ug/kg	U		
NOAA	26	CH03-02	CH03-02		PCB-170 PCB-170	1.6	ug/kg	U		
NOAA	27	CH03-03	CH03-03			1.7	ug/kg			
NOAA	28	CH03-04	CH03-04		PCB-170	2.0	ug/kg			
NOAA	296	WST08-01	WST08-01		PCB-170	1.3	ug/kg			
NOAA	297	WST08-02	WST08-02		PCB-170	2.0	ug/kg			
NOAA	298	WST08-03	WST08-03		PCB-170	2.2	ug/kg			
NOAA	299	WST08-04	WST08-04		PCB-170	3.0	ug/kg			
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-170	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		PCB-170	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-170	2.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-170	3.0	ug/kg	J		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm		1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm		1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm		1.0	ug/kg	UJ		
EPA SI		DDDDC 0000	SD-DR235-0000	0-10 cm	PCB-18	1.0	ug/kg	UJ		
	801	DR235-0000								
NOAA	801 25	CH03-01	CH03-01		PCB-180	3.1	ug/kg			
NOAA NOAA				0-10 cm	PCB-180 PCB-180	3.1 1.8	ug/kg ug/kg			



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
NOAA	28	CH03-04	CH03-04	0-10 cm	PCB-180	1.6	ug/kg			
NOAA	296	WST08-01	WST08-01	0-10 cm	PCB-180	2.0	ug/kg	U		
NOAA	297	WST08-02	WST08-02	0-10 cm	PCB-180	2.5	ug/kg	U		
NOAA	298	WST08-03	WST08-03	0-10 cm	PCB-180	4.3	ug/kg	U		
NOAA	299	WST08-04	WST08-04	0-10 cm	PCB-180	4.2	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-180	2.0	ug/kg			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-180	1.0	ug/kg	J		
EPA SI	796	DR230-0000	SD-DR230-0000	ł	PCB-180	2.0	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-180	3.0	ug/kg	J		
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-187	1.0	ug/kg	_		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-187	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCB-187	2.0	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-187	2.0	ug/kg	J		
NOAA	25	CH03-01	CH03-01	ł	PCB-189	0.48	ug/kg	U		
NOAA	26	CH03-02	CH03-02		PCB-189	2.0	ug/kg	U		
NOAA	27	CH03-03	CH03-03		PCB-189	0.81	ug/kg	U		
	+	CH03-03		ł						
NOAA	28		CH03-04		PCB-189	1.5	ug/kg	U		
NOAA	296	WST08-01	WST08-01	ł	PCB-189	0.34	ug/kg	U		
NOAA	297	WST08-02	WST08-02		PCB-189	0.28	ug/kg	U		
NOAA	298	WST08-03	WST08-03		PCB-189	0.46	ug/kg	U		
NOAA	299	WST08-04	WST08-04		PCB-189	0.46	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-189	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-189	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-189	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-189	1.0	ug/kg	UJ		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-195	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-195	1.0	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCB-195	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-195	1.0	ug/kg	UJ		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-206	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-206	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCB-206	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-206	1.0	ug/kg	UJ		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-28	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-28	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-28	1.0	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-28	1.0	ug/kg	UJ		
EPA SI	794	DR228-0000	SD-DR228-0000		PCB-44	1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-44	2.0	ug/kg	J		
EPA SI	796	DR230-0000	SD-DR230-0000		PCB-44	1.0	ug/kg	J		
EPA SI	801	DR235-0000	SD-DR235-0000		PCB-44	1.0	ug/kg	J		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm		1.0	ug/kg	-		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm		2.0	ug/kg	J		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm		2.0		J		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm		2.0	ug/kg ug/kg	J		
EPA SI	794	DR235-0000 DR228-0000		0-10 cm		2.0		J		
	-		SD-DR228-0000	0-10 cm			ug/kg	111		
EPA SI	795	DR229-0000	SD-DR229-0000			1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm		4.0	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm		4.0	ug/kg			
NOAA	25	CH03-01	CH03-01	0-10 cm		0.47	ug/kg	U		
NOAA	26	CH03-02	CH03-02	0-10 cm		1.9	ug/kg	U		
NOAA	27	CH03-03	CH03-03	0-10 cm		0.79	ug/kg	U		
NOAA	28	CH03-04	CH03-04	0-10 cm		1.4	ug/kg	U		
NOAA	296	WST08-01	WST08-01	0-10 cm		0.34	ug/kg	U		
NOAA	297	WST08-02	WST08-02	0-10 cm		0.28	ug/kg	U		
NOAA	298	WST08-03	WST08-03	0-10 cm		0.45	ug/kg	U		
NOAA	299	WST08-04	WST08-04	0-10 cm		0.45	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm		1.0	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCB-77	1.0	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCB-77	1.0	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-77	1.0	ug/kg	U		
							1 .			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCB-81	1.0	ug/kg	U		
EPA SI EPA SI EPA SI	794 795	DR228-0000 DR229-0000	SD-DR228-0000 SD-DR229-0000	0-10 cm 0-10 cm		1.0	ug/kg ug/kg	U		



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCB-81	1.0	ug/kg	UJ		
NOAA	25	CH03-01	CH03-01	0-10 cm	PCBs (total calc'd)	79	ug/kg		4.1	mg/kg OC
NOAA	26	CH03-02	CH03-02	0-10 cm	PCBs (total calc'd)	14	ug/kg		0.80	mg/kg OC
NOAA	27	CH03-03	CH03-03	0-10 cm	PCBs (total calc'd)	28	ug/kg		1.5	mg/kg OC
NOAA	28	CH03-04	CH03-04	0-10 cm	PCBs (total calc'd)	25	ug/kg		1.5	mg/kg OC
NOAA	296	WST08-01	WST08-01	0-10 cm	PCBs (total calc'd)	30	ug/kg		2.0	mg/kg OC
NOAA	297	WST08-02	WST08-02	0-10 cm	PCBs (total calc'd)	38	ug/kg		2.4	mg/kg OC
NOAA	298	WST08-03	WST08-03	0-10 cm	PCBs (total calc'd)	67	ug/kg		3.2	mg/kg OC
NOAA	299	WST08-04	WST08-04	0-10 cm	PCBs (total calc'd)	99	ug/kg		4.2	mg/kg OC
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	PCBs (total calc'd)	138	ug/kg		6.9	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	PCBs (total calc'd)	56	ug/kg		21	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	PCBs (total calc'd)	32	ug/kg		11	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	PCBs (total calc'd)	161	ug/kg		6.5	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	PCBs (total calc'd)	22	ug/kg		1.1	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	PCBs (total calc'd)	86	ug/kg		3.6	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	PCBs (total calc'd)	75	ug/kg		3.9	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	PCBs (total calc'd)	35	ug/kg		1.8	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	PCBs (total calc'd)	55	ug/kg		2.6	mg/kg OC
					HPAHs					
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Benzo(a)anthracene	450	ug/kg	U	170	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Benzo(a)anthracene	450	ug/kg	U	150	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Benzo(a)anthracene	61	ug/kg	U	3.2	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Benzo(a)anthracene	83	ug/kg		3.9	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Benzo(a)anthracene	160	ug/kg		6.5	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Benzo(a)anthracene	70	ug/kg		3.4	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Benzo(a)anthracene	100	ug/kg		4.2	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Benzo(a)anthracene	80	ug/kg		4.2	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Benzo(a)pyrene	680	ug/kg	U	250	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Benzo(a)pyrene	680	ug/kg	U	230	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Benzo(a)pyrene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Benzo(a)pyrene	94	ug/kg	U	4.4	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Benzo(a)pyrene	140	ug/kg		5.6	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Benzo(a)pyrene	80	ug/kg		3.9	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Benzo(a)pyrene	120	ug/kg		5.0	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Benzo(a)pyrene	90	ug/kg		4.7	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Benzofluoranthenes (total-calc'd)	112	ug/kg		5.9	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Benzofluoranthenes (total-calc'd)	230	ug/kg		10.6	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-2 ft 0-4 ft	Benzo(g,h,l)perylene	540	ug/kg	U	200	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Benzo(g,h,l)perylene	540	ug/kg	U	180	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Benzo(g,h,i)perylene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Benzo(g,h,i)perylene	77	ug/kg	-	3.6	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000		Benzo(ghi)perylene	110	ug/kg		4.4	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000		Benzo(ghi)perylene	80	ug/kg		3.9	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Benzo(ghi)perylene	80	ug/kg		3.3	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Benzo(ghi)perylene	70	ug/kg ug/kg		3.6	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-10 cm	Benzofluoranthenes (total-calc'd)	400	ug/kg ug/kg	U	150	mg/kg OC
SP Marina	6629	SOPARK91C001	Comp 2	0-4 ft	Benzofluoranthenes (total-calc'd)	400	ug/kg ug/kg	U	130	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Benzofluoranthenes (total-calc'd)	340	ug/kg	U	14	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Benzofluoranthenes (total-calc'd)	180	ug/kg		8.8	mg/kg OC
EPA SI		DR229-0000 DR230-0000	SD-DR229-0000 SD-DR230-0000	0-10 cm	, ,				12	mg/kg OC
	796				Benzofluoranthenes (total-calc'd)	280	ug/kg			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Benzofluoranthenes (total-calc'd)	220	ug/kg		11	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Chrysene	670	ug/kg	U	250	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Chrysene	670	ug/kg	U	220	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Chrysene	70	ug/kg		3.7	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Chrysene	120	ug/kg		5.7	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Chrysene	230	ug/kg		9.3	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Chrysene	110	ug/kg		5.4	mg/kg OC
EPA SI	1			0-10 cm	Chrysene	160	ug/kg		6.7	mg/kg OC
	796	DR230-0000	SD-DR230-0000		'					
EPA SI	796 801	DR235-0000	SD-DR235-0000	0-10 cm	Chrysene	130	ug/kg		6.8	mg/kg OC
EPA SI SP Marina	796 801 6627	DR235-0000 SOPARK91C001	SD-DR235-0000 Comp 1	0-10 cm 0-4 ft	Dibenzo(a,h)anthracene	120	ug/kg	U	6.8 44	mg/kg OC mg/kg OC
EPA SI SP Marina SP Marina	796 801 6627 6629	DR235-0000 SOPARK91C001 SOPARK91C002	SD-DR235-0000 Comp 1 Comp 2	0-10 cm 0-4 ft 0-4 ft	Dibenzo(a,h)anthracene Dibenzo(a,h)anthracene	120 120	ug/kg ug/kg	U	6.8 44 40	mg/kg OC mg/kg OC mg/kg OC
EPA SI SP Marina SP Marina PSSDA98	796 801 6627	DR235-0000 SOPARK91C001 SOPARK91C002 S1	SD-DR235-0000 Comp 1 Comp 2 S1	0-10 cm 0-4 ft	Dibenzo(a,h)anthracene	120	ug/kg		6.8 44	mg/kg OC mg/kg OC
EPA SI SP Marina SP Marina	796 801 6627 6629	DR235-0000 SOPARK91C001 SOPARK91C002	SD-DR235-0000 Comp 1 Comp 2	0-10 cm 0-4 ft 0-4 ft	Dibenzo(a,h)anthracene Dibenzo(a,h)anthracene	120 120	ug/kg ug/kg	U	6.8 44 40	mg/kg OC mg/kg OC mg/kg OC



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Dibenzo(ah)anthracene	20	ug/kg		0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Dibenzo(ah)anthracene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Dibenzo(ah)anthracene	20	ug/kg	U	1.0	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Fluoranthene	630	ug/kg	U	230	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Fluoranthene	630	ug/kg	U	210	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Fluoranthene	160	ug/kg		8.2	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Fluoranthene	200	ug/kg		9.3	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Fluoranthene	520	ug/kg		21	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Fluoranthene	180	ug/kg		8.8	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Fluoranthene	290	ug/kg		12	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Fluoranthene	200	ug/kg		10	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Indeno(1,2,3-c,d)pyrene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Indeno(1,2,3-c,d)pyrene	95	ug/kg		4.4	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Indeno(1,2,3-cd)pyrene	69	ug/kg	U	26	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Indeno(1,2,3-cd)pyrene	69	ug/kg	U	23	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Indeno(123-cd)pyrene	110	ug/kg		4.4	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Indeno(123-cd)pyrene	70	ug/kg		3.4	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Indeno(123-cd)pyrene	90	ug/kg		3.8	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Indeno(123-cd)pyrene	70	ug/kg		3.6	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Pyrene	430	ug/kg	U	160	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Pyrene	430	ug/kg	U	140	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Pyrene	29	ug/kg		1.5	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Pyrene	240	ug/kg		11	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Pyrene	450	ug/kg		18	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Pyrene	170	ug/kg		8.3	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Pyrene	240	ug/kg		10	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Pyrene	220	ug/kg		11	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Total HPAH (calc'd)	680	ug/kg	U	250	mg/kg OC
SP Marina	6629		Comp 2	0-4 ft	Total HPAH (calc'd)	680	ug/kg	U	230	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Total HPAH (calc'd)	371	ug/kg		25	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Total HPAH (calc'd)	49619.6	ug/kg		65	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Total HPAH (calc'd)	2080	ug/kg		84	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Total HPAH (calc'd)	960	ug/kg		47	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Total HPAH (calc'd)	1360	ug/kg		57	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Total HPAH (calc'd)	1080	ug/kg		56	mg/kg OC
					LPAHs					
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Acenaphthene	63	ug/kg	U	23	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Acenaphthene	63	ug/kg	U	21	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Acenaphthene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Acenaphthene	19	ug/kg	U	0.9	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000		Acenaphthene	30	ug/kg		1.2	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000		Acenaphthene	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000		Acenaphthene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Acenaphthene	20	ug/kg	U	1.0	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Acenaphthylene	64	ug/kg	U	24	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Acenaphthylene	64	ug/kg	U	21	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Acenaphthylene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Acenaphthylene	19	ug/kg	U	0.9	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Acenaphthylene	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Acenaphthylene	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Acenaphthylene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Acenaphthylene	20	ug/kg	U	1.0	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Anthracene	130	ug/kg	U	48	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Anthracene	130	ug/kg	U	43	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Anthracene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Anthracene	19	ug/kg	U	0.9	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Anthracene	40	ug/kg		1.6	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Anthracene	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Anthracene	20	ug/kg		0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Anthracene	20	ug/kg	U	1.0	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Fluorene	64	ug/kg	U	24	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Fluorene	64	ug/kg	U	21	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Fluorene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Fluorene	19	ug/kg	U	0.9	mg/kg OC



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Fluorene	40	ug/kg		1.6	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Fluorene	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Fluorene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Fluorene	20	ug/kg	U	1.0	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Naphthalene	210	ug/kg	U	78	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Naphthalene	210	ug/kg	U	70	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Naphthalene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Naphthalene	19	ug/kg	U	0.9	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Naphthalene	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Naphthalene	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Naphthalene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Naphthalene	20	ug/kg	U	1.0	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Phenanthrene	320	ug/kg	U	120	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Phenanthrene	320	ug/kg	U	110	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Phenanthrene	75	ug/kg		3.9	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Phenanthrene	72	ug/kg		3.3	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Phenanthrene	240	ug/kg		9.7	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Phenanthrene	70	ug/kg		3.4	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Phenanthrene	100	ug/kg		4.2	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Phenanthrene	80	ug/kg		4.2	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Total LPAH (calc'd)	320	ug/kg	U	120	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Total LPAH (calc'd)	320	ug/kg	U	110	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Total LPAH (calc'd)	75	ug/kg		3.9	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Total LPAH (calc'd)	72	ug/kg		3.3	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Total LPAH (calc'd)	350	ug/kg		14	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Total LPAH (calc'd)	70	ug/kg		3.4	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Total LPAH (calc'd)	120	ug/kg		5.0	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Total LPAH (calc'd)	80	ug/kg		4.2	mg/kg OC
					Semivolotile Organics					
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	1,3-Dichlorobenzene	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	1,3-Dichlorobenzene	20	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	1,3-Dichlorobenzene	1.4	ug/kg			
PSSDA98	6643	S2	S2	0-2 ft	1,3-Dichlorobenzene	1.5	ug/kg			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	1,3-Dicholorbenzene	170	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	1,3-Dicholorbenzene	170	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	2,4,5-Trichlorophenol	200	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	2,4,5-Trichlorophenol	200	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000		2,4,6-Trichlorophenol	200	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000		2,4,6-Trichlorophenol	200	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	+	2,4-Dichlorophenol	60	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		2,4-Dichlorophenol	60	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000		2,4-Dichlorophenol	60	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	+	2,4-Dichlorophenol	60	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		2,4-Dimethylphenol	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	+	2,4-Dimethylphenol	20	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000		2,4-Dimethylphenol	20	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	2,4-Dimethylphenol	20	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	2,4-Dimethylphenol	19	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	2,4-Dimethylphenol	29	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	2,4-Dimethylphenol	29	ug/kg	U		
			SD-DR228-0000		2,4-Dinitrophenol	200	ug/kg	U		
		DR228-0000	30-01220-0000					. –		
EPA SI	794	DR228-0000 DR229-0000			2.4-Dinitrophenol	200	ug/ka	IJ		
EPA SI EPA SI	794 795	DR229-0000	SD-DR229-0000	0-10 cm	2,4-Dinitrophenol 2.4-Dinitrophenol	200 200	ug/kg ug/ka	U		
EPA SI EPA SI EPA SI	794 795 796	DR229-0000 DR230-0000	SD-DR229-0000 SD-DR230-0000	0-10 cm 0-10 cm	2,4-Dinitrophenol	200	ug/kg	UJ		
EPA SI EPA SI EPA SI EPA SI	794 795 796 801	DR229-0000 DR230-0000 DR235-0000	SD-DR229-0000 SD-DR230-0000 SD-DR235-0000	0-10 cm 0-10 cm 0-10 cm	2,4-Dinitrophenol 2,4-Dinitrophenol	200 200	ug/kg ug/kg	UJ		
EPA SI EPA SI EPA SI	794 795 796	DR229-0000 DR230-0000	SD-DR229-0000 SD-DR230-0000	0-10 cm 0-10 cm 0-10 cm 0-10 cm	2,4-Dinitrophenol	200	ug/kg	UJ		



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	2,4-Dinitrotoluene	200	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	2,6-Dinitrotoluene	200	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	2,6-Dinitrotoluene	200	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	2,6-Dinitrotoluene	200	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	2,6-Dinitrotoluene	200	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	2-Chloronaphthalene	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	2-Chloronaphthalene	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	2-Chloronaphthalene	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	2-Chloronaphthalene	20	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	2-Chlorophenol	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	2-Chlorophenol	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	2-Chlorophenol	20	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	2-Chlorophenol	20	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	2-Methylnaphthalene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	2-Methylnaphthalene	19	ug/kg	U	0.90	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	2-Methylnaphthalene	67	ug/kg	U	25	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	2-Methylnaphthalene	67	ug/kg	U	22	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	2-Methylphenol	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	2-Methylphenol	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	2-Methylphenol	20	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	2-Methylphenol	20	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	2-Methylphenol	20	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	2-Methylphenol	19	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	2-Methylphenol	120	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	2-Methylphenol	120	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	2-Nitroaniline	100	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	2-Nitroaniline	100	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	2-Nitroaniline	100	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	2-Nitroaniline	100	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	2-Nitrophenol	100	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	2-Nitrophenol	100	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	2-Nitrophenol	100	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	2-Nitrophenol	100	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	3 and 4-Methylphenol Coelution	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	3 and 4-Methylphenol Coelution	40	ug/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	3 and 4-Methylphenol Coelution	20	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	3 and 4-Methylphenol Coelution	20	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	3,3'-Dichlorobenzidine	200	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	3,3'-Dichlorobenzidine	200	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	3,3'-Dichlorobenzidine	200	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	3,3'-Dichlorobenzidine	200	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	3-Nitroaniline	200	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	3-Nitroaniline	200	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	3-Nitroaniline	200	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	3-Nitroaniline	200	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	4,6-Dinitro-o-cresol	200	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	4,6-Dinitro-o-cresol	200	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000		4-Bromophenyl phenyl ether	40	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	-	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	4-Chloro-3-methylphenol	40	ug/kg	UJ		
		DD005 0000	SD-DR235-0000	0-10 cm	4-Chloro-3-methylphenol	40	ug/kg	U		
EPA SI	801	DR235-0000		1	4-Chloroaniline	60	ug/kg	U	_	1
EPA SI EPA SI	801 794	DR235-0000 DR228-0000	SD-DR228-0000	0-10 cm	4-Chioroaniinie	60	ug/kg			
EPA SI			SD-DR228-0000 SD-DR229-0000		4-Chloroaniline	60	ug/kg ug/kg	U		
EPA SI EPA SI	794	DR228-0000		0-10 cm		+				
EPA SI EPA SI EPA SI EPA SI EPA SI	794 795	DR228-0000 DR229-0000	SD-DR229-0000	0-10 cm 0-10 cm	4-Chloroaniline	60	ug/kg	U		
EPA SI EPA SI EPA SI EPA SI	794 795 796	DR228-0000 DR229-0000 DR230-0000	SD-DR229-0000 SD-DR230-0000	0-10 cm 0-10 cm 0-10 cm	4-Chloroaniline 4-Chloroaniline	60 60	ug/kg ug/kg	U		
EPA SI EPA SI EPA SI EPA SI EPA SI	794 795 796 801	DR228-0000 DR229-0000 DR230-0000 DR235-0000	SD-DR229-0000 SD-DR230-0000 SD-DR235-0000	0-10 cm 0-10 cm 0-10 cm 0-10 cm	4-Chloroaniline 4-Chloroaniline 4-Chloroaniline	60 60 60	ug/kg ug/kg ug/kg	U U U		



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	4-Chlorophenyl phenyl ether	20	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	4-Methylphenol	20	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	4-Methylphenol	19	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	4-Methylphenol	120	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	4-Methylphenol	120	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	4-Nitroaniline	100	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	4-Nitroaniline	100	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	4-Nitroaniline	100	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	4-Nitroaniline	100	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	4-Nitrophenol	100	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	4-Nitrophenol	100	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	4-Nitrophenol	100	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	4-Nitrophenol	100	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Benzoic acid	200	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Benzoic acid	200	ug/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Benzoic acid	200	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Benzoic acid	200	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Benzoic Acid	200	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Benzoic Acid	190	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Benzoic acid	400	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Benzoic acid	400	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Benzyl alcohol	50	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Benzyl alcohol	50	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Benzyl alcohol	50	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Benzyl alcohol	50	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Benzyl Alcohol	20	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Benzyl Alcohol	19	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Benzyl alcohol	25	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Benzyl alcohol	25	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	bis(2-chloroethoxy)methane	40	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	bis(2-chloroethyl)ether	40	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000		bis(2-chloroisopropyl)ether	40	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	bis(2-chloroisopropyl)ether	40	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	bis(2-chloroisopropyl)ether	40	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000		bis(2-chloroisopropyl)ether	40	ug/kg	U		
SP Marina	6627		Comp 1	0-4 ft	Bis(2-ethylexyl)phthalatel	3100	ug/kg	U	1100	mg/kg OC
SP Marina	6629	SOPARK91C002		0-4 ft	Bis(2-ethylexyl)phthalatel	3100	ug/kg	U	1000	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Bis(2-Ethylhexyl) phthalate	180	ug/kg		9.6	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Bis(2-Ethylhexyl) phthalate	300	ug/kg		14.0	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Bis(2-ethylhexyl)phthalate	410	ug/kg		17	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	+	Bis(2-ethylhexyl)phthalate	200	ug/kg		9.8	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Bis(2-ethylhexyl)phthalate	360	ug/kg		15	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000		Bis(2-ethylhexyl)phthalate	240	ug/kg		13	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000		Butyl benzyl phthalate	30	ug/kg		1.2	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Butyl benzyl phthalate	20	ug/kg		0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000		Butyl benzyl phthalate	30	ug/kg		1.3	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Butyl benzyl phthalate	30	ug/kg		1.6	mg/kg OC
PSSDA98	6642	S1	S1	0-10 cm	Butylbenzyl phthalate	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Butylbenzyl phthalate	19	ug/kg	U	1.1	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-2 ft	Butylbenzyl-phthalate	470	ug/kg ug/kg	U	170	mg/kg OC
SP Marina	6629	SOPARK91C001	Comp 2	0-4 ft	Butylbenzyl-phthalate	470	ug/kg ug/kg	U	160	mg/kg OC
						_		U	100	mg/kg OC
EPA SI EPA SI	794 795	DR228-0000 DR229-0000	SD-DR228-0000 SD-DR229-0000	0-10 cm	Carbazole	20	ug/kg	U		
	795			0-10 cm	Carbazole	20	ug/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Carbazole	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Carbazole	20	ug/kg	U	4.0	
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Dibenzofuran	30	ug/kg	.,	1.2	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Dibenzofuran	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Dibenzofuran	20	ug/kg	U	0.83	mg/kg OC



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Dibenzofuran	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Dibenzofuran	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Dibenzofuran	19	ug/kg	U	0.9	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Dibenzofuran	54	ug/kg	U	20	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Dibenzofuran	54	ug/kg	U	18	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Diethyl phthalate	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Diethyl phthalate	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Diethyl phthalate	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Diethyl phthalate	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Diethyl phthalate	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Diethyl phthalate	19	ug/kg	U	0.9	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Diethyl phthalate	97	ug/kg	U	36	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Diethyl phthalate	97	ug/kg	U	32	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Dimethyl phthalate	20	ug/kg		0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Dimethyl phthalate	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Dimethyl phthalate	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Dimethyl phthalate	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Dimethyl phthalate	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Dimethyl phthalate	19	ug/kg	U	0.9	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Dimethyl phthalate	160	ug/kg	U	59	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Dimethyl phthalate	160	ug/kg	U	53	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Di-n-butyl phthalate	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Di-n-butyl phthalate	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Di-n-butyl phthalate	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Di-n-butyl phthalate	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Di-n-butyl phthalate	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Di-n-butyl phthalate	19	ug/kg	U	0.9	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Di-n-butyl phthalate	1400	ug/kg	U	520	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Di-n-butyl phthalate	1400	ug/kg	U	470	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Di-n-octyl phthalate	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Di-n-octyl phthalate	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Di-n-octyl phthalate	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Di-n-octyl phthalate	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Di-n-octyl phthalate	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Di-n-octyl phthalate	19	ug/kg	U	0.9	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Di-n-octyl phthalate	6200	ug/kg	U	2300	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Di-n-octyl phthalate	6200	ug/kg	U	2100	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Hexachlorobenzene	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Hexachlorobenzene	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Hexachlorobenzene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Hexachlorobenzene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Hexachlorobenzene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Hexachlorobenzene	19	ug/kg	U	0.9	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Hexachlorobenzene	23	ug/kg	U	8.5	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Hexachlorobenzene	23	ug/kg	U	7.7	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Hexachlorobutadiene	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Hexachlorobutadiene	20	ug/kg	U	0.98	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Hexachlorobutadiene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Hexachlorobutadiene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	Hexachlorobutadiene	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	Hexachlorobutadiene	19	ug/kg	U	0.9	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Hexachlorobutadiene	29	ug/kg	U	11	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Hexachlorobutadiene	29	ug/kg	U	9.7	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Hexachlorocyclopentadiene	100	ug/kg	UJ		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Hexachlorocyclopentadiene	100	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000		Hexachlorocyclopentadiene	100	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Hexachlorocyclopentadiene	100	ug/kg	UJ		
EPA SI	794	DR228-0000	SD-DR228-0000		Hexachloroethane	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000		Hexachloroethane	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000		Hexachloroethane	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	+	Hexachloroethane	20	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Hexachloroethane	20	ug/kg			
PSSDA98	6643	S2	S2	0-2 ft	Hexachloroethane	19	ug/kg			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Hexachloroethane	1400	ug/kg	U		
Oi mailla	0021	221 /11/13/10/01	Comp i	0 1 11	1 TO AGOTHOTO GHIGHG	1 +00	ug/kg	J	1	1



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Hexachloroethane	1400	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Isophorone	20	ug/kg	J		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Isophorone	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Isophorone	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Isophorone	20	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Nitrobenzene	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Nitrobenzene	20	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Nitrobenzene	20	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Nitrobenzene	20	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	N-Nitroso-di-n-propylamine	40	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	N-Nitroso-di-n-propylamine	40	ug/kg	U		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	N-Nitroso-di-n-propylamine	40	ug/kg	U		
EPA SI	801	DR235-0000	SD-DR235-0000	ł	N-Nitroso-di-n-propylamine	40	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	N-Nitrosodiphenylamine	40	ug/kg	U	1.6	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	N-Nitrosodiphenylamine	40	ug/kg	U	2.0	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	ł	N-Nitrosodiphenylamine	40	ug/kg	U	1.7	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	N-Nitrosodiphenylamine	40	ug/kg	U	2.1	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	N-Nitrosodiphenylamine	28	ug/kg	U	10	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	N-Nitrosodiphenylamine	28	ug/kg	U	9.3	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	N-nitroso-diphenylamine	20	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	N-nitroso-diphenylamine	19	ug/kg	U	0.90	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Pentachlorophenol	100	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Pentachlorophenol	100	ug/kg	UJ		
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Pentachlorophenol	100	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Pentachlorophenol	100	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Pentachlorophenol	100	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Pentachlorophenol	96	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Pentachlorophenol	100	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Pentachlorophenol	100	ug/kg	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Phenol	20	ug/kg	U		
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Phenol	1500	ug/kg			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Phenol	20	ug/kg	UJ		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Phenol	20	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Phenol	20	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Phenol	19	ug/kg	J		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Phenol	120	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Phenol	120	ug/kg	U		
					Volatile Organics					
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	1,2,4-Trichlorobenzene	13	ug/kg	U	4.8	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	1,2,4-Trichlorobenzene	13	ug/kg	J	4.3	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	1,2,4-Trichlorobenzene	7.2	ug/kg	J	0.30	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	1,2,4-Trichlorobenzene	7.6	ug/kg	U	0.40	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	1,2,4-Trichlorobenzene	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	1,2,4-Trichlorobenzene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	1,2,4-Trichlorobenzene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	1,2,4-Trichlorobenzene	20	ug/kg	U	1.0	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	1,2-Dichlorobenzene	19	ug/kg	U	7.0	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	1,2-Dichlorobenzene	19	ug/kg	U	6.3	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	1,2-Dichlorobenzene	1.4	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	1,2-Dichlorobenzene	1.5	ug/kg	U	0.90	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	1,2-Dichlorobenzene	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000		1,2-Dichlorobenzene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	1,2-Dichlorobenzene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	1,2-Dichlorobenzene	20	ug/kg	U	1.0	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	1,4-Dichlorobenzene	26	ug/kg	U	9.6	mg/kg OC
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	1,4-Dichlorobenzene	26	ug/kg	U	8.7	mg/kg OC
PSSDA98	6642	S1	S1	0-2 ft	1,4-Dichlorobenzene	1.4	ug/kg	U	1.0	mg/kg OC
PSSDA98	6643	S2	S2	0-2 ft	1,4-Dichlorobenzene	1.5	ug/kg	U	0.90	mg/kg OC
EPA SI	794	DR228-0000	SD-DR228-0000	ł	1,4-Dichlorobenzene	20	ug/kg	U	0.81	mg/kg OC
EPA SI	795	DR229-0000	SD-DR229-0000		1,4-Dichlorobenzene	20	ug/kg	U	1.0	mg/kg OC
EPA SI	796	DR230-0000	SD-DR230-0000	ł	1,4-Dichlorobenzene	20	ug/kg	U	0.83	mg/kg OC
EPA SI	801	DR235-0000	SD-DR235-0000		1,4-Dichlorobenzene	20	ug/kg	U	1.0	mg/kg OC
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Ethylbenzene	10	ug/kg	U	_	5 5 2 5
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Ethylbenzene	10	ug/kg	U		
	5525		1	, , . n	. ,		ອ່ເອ		1	1



		dredged se	aiment				1			
Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
PSSDA98	6642	S1	S1	0-2 ft	Ethylbenzene	1.4	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Ethylbenzene	1.5	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Tetrachloroethene	10	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Tetrachloroethene	10	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Tetrachloroethene	1.4	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Tetrachloroethene	1.5	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Total Xylenes	14	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Total Xylenes	10	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Total Xylenes	4.3	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Total Xylenes	4.5	ug/kg	U		
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Trichloroethene	10	ug/kg	U		
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Trichloroethene	10	ug/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Trichloroethene	1.4	ug/kg	U		
PSSDA98	6643	S2	S2	0-2 ft	Trichloroethene	1.5	ug/kg	U		
					Conventionals					
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Ammonia	26.0	mg/kg			
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Ammonia	40.0	mg/kg			
PSSDA98	6642	S1	S1	0-2 ft	Ammonia	34	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Ammonia	49	mg/kg			·
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Sulfide	5.0	mg/kg	U		·
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Sulfide	5.0	mg/kg	U		
PSSDA98	6642	S1	S1	0-2 ft	Sulfide	1700	mg/kg			
PSSDA98	6643	S2	S2	0-2 ft	Sulfide	1400	mg/kg			
PSSDA98	6642	S1	S1	0-2 ft	Total Organic Carbon (TOC)	1.9	%			
PSSDA98	6643	S2	S2	0-2 ft	Total Organic Carbon (TOC)	2.1	%			
NOAA	25	CH03-01	CH03-01	0-10 cm	Total Organic Carbon (TOC)	1.9	%			
NOAA	26	CH03-02	CH03-02	0-10 cm	Total Organic Carbon (TOC)	1.7	%			
NOAA	27	CH03-03	CH03-03	0-10 cm	Total Organic Carbon (TOC)	1.9	%			
NOAA	28	CH03-04	CH03-04	0-10 cm	Total Organic Carbon (TOC)	1.7	%			
NOAA	296	WST08-01	WST08-01	0-10 cm	Total Organic Carbon (TOC)	1.5	%			
NOAA	297	WST08-02	WST08-02	0-10 cm	Total Organic Carbon (TOC)	1.6	%			
NOAA	298	WST08-03	WST08-03	0-10 cm	Total Organic Carbon (TOC)	2.1	%			
NOAA	299	WST08-04	WST08-04	0-10 cm	Total Organic Carbon (TOC)	2.3	%			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Total Organic Carbon (TOC)	2.0	%			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Total Organic Carbon (TOC)	0.3	%			
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Total Organic Carbon (TOC)	0.3	%			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Total Organic Carbon (TOC)	2.5	%			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Total Organic Carbon (TOC)	2.0	%			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Total Organic Carbon (TOC)	2.4	%			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Total Organic Carbon (TOC)	1.9	%			
SP Marina	6627	SOPARK91C001	Comp 1	0-4 ft	Total solids ^a	53	%			
SP Marina	6629	SOPARK91C002	Comp 2	0-4 ft	Total solids ^a	55	%			
PSSDA98	6642	S1	S1	0-2 ft	Total solids ^a	58.3	%			
PSSDA98	6643	S2	S2	0-2 ft	Total solids ^a	49.9	%			
					Grain size					
NOAA	25	CH03-01	CH03-01	0-10 cm	Clay	20	%			
NOAA	26	CH03-02	CH03-02	0-10 cm	-	18	%			
NOAA	27	CH03-03	CH03-03	0-10 cm		19	%			
NOAA	28	CH03-04	CH03-04	0-10 cm		18	%			
NOAA	296	WST08-01	WST08-01	0-10 cm		15	%			
NOAA	297	WST08-02	WST08-02	0-10 cm		16	%			
NOAA	298	WST08-03	WST08-03	0-10 cm		21	%			
NOAA	299	WST08-04	WST08-04	0-10 cm		21	%			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	,	13	%			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	,	15	%			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	•	11	%			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm		14	%			
	790			1	Clay	13	%			
EPA SI		DR235-0000	SD-DR235-0000	0-10 cm						
EPA SI PSSDA98	801	DR235-0000 S1	SD-DR235-0000 S1		•					
PSSDA98	801 6642	S1	S1	0-2 ft	Clay	8.7	%			
PSSDA98 PSSDA98	801 6642 6643	S1 S2	S1 S2	0-2 ft 0-2 ft	Clay Clay	8.7 15.5	%			
PSSDA98 PSSDA98 PSSDA98	801 6642 6643 6642	\$1 \$2 \$1	\$1 \$2 \$1	0-2 ft 0-2 ft 0-2 ft	Clay Clay Fines (percent silt+clay)	8.7 15.5 48.1	% % %			
PSSDA98 PSSDA98	801 6642 6643	S1 S2	S1 S2	0-2 ft 0-2 ft 0-2 ft 0-2 ft	Clay Clay	8.7 15.5	%			



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Event	Location Number	SedQual Sample ID	Sample ID	Depth Horizon	Parameter	Value	Unit dw	Q	Value OC	Unit OC dw
NOAA	27	CH03-03	CH03-03	0-10 cm	Fines (percent silt+clay)	91	%			
NOAA	28	CH03-04	CH03-04	0-10 cm	Fines (percent silt+clay)	91	%			
NOAA	296	WST08-01	WST08-01	0-10 cm	Fines (percent silt+clay)	79	%			
NOAA	297	WST08-02	WST08-02	0-10 cm	Fines (percent silt+clay)	86	%			
NOAA	298	WST08-03	WST08-03	0-10 cm	Fines (percent silt+clay)	96	%			
NOAA	299	WST08-04	WST08-04	0-10 cm	Fines (percent silt+clay)	95	%			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Fines (percent silt+clay)	78	%			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Fines (percent silt+clay)	84	%			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Fines (percent silt+clay)	68	%			
EPA SI EPA SI	796 801	DR230-0000 DR235-0000	SD-DR230-0000 SD-DR235-0000	0-10 cm	Fines (percent silt+clay) Fines (percent silt+clay)	86 79	%			
NOAA	25	CH03-01	CH03-01	0-10 cm	Gravel	0.01	%	U		
NOAA	26	CH03-01	CH03-02	0-10 cm	Gravel	0.01	%	U		
NOAA	27	CH03-02 CH03-03	CH03-03	0-10 cm		0.01	%	U		
NOAA	28	CH03-03	CH03-03	0-10 cm	Gravel Gravel	0.01	%	U		
NOAA	296	WST08-01	WST08-01	0-10 cm	Gravel	0.01	%	U		
NOAA	297	WST08-01	WST08-02	0-10 cm	Gravel	0.01	%	U		
							%	U		
NOAA NOAA	298 299	WST08-03 WST08-04	WST08-03 WST08-04	0-10 cm	Gravel	0.01	%	U		
PSSDA98	6642	S1	S1	0-10 cm 0-2 ft	Gravel Gravel	0.01	%	U		
PSSDA98 PSSDA98		S2	S1 S2	0-2 ft		0.3	%			
Plant 2 RFI-2b	6643 498	DUW83-0000	SD2B-DUW83-0000	0-2 π 0-10 cm	Gravel Rocks	0.01	%	U		
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Rocks	0.01	%	U		
EPA SI							%	U		
EPA SI	795 796	DR229-0000 DR230-0000	SD-DR229-0000 SD-DR230-0000	0-10 cm	Rocks Rocks	0.05 0.01	%	U		
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Rocks	0.01	%	U		
NOAA	25	CH03-01	CH03-01	0-10 cm	Sand	5.8	%	U		
NOAA	26	CH03-02	CH03-02	0-10 cm	Sand	15	%			
NOAA	27	CH03-02 CH03-03	CH03-03	0-10 cm	Sand	8.7	%			
NOAA	28	CH03-04	CH03-04	0-10 cm	Sand	9.0	%			
NOAA	296	WST08-01	WST08-01	0-10 cm	Sand	21	%			
NOAA	297	WST08-01	WST08-02	0-10 cm	Sand	14	%			
NOAA	298	WST08-02	WST08-03	0-10 cm	Sand	4.4	%			
NOAA	299	WST08-03	WST08-04	0-10 cm	Sand	5.2	%			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000	0-10 cm	Sand	22	%			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm	Sand	16	%			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm	Sand	32	%			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Sand	14	%			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Sand	21	%			
PSSDA98	6642	S1	S1	0-2 ft	Sand	51.6	%			
PSSDA98	6643	S2	S2	0-2 ft	Sand	20.8	%			
NOAA	25	CH03-01	CH03-01	0-10 cm		74	%			
NOAA	26	CH03-02	CH03-02	0-10 cm		67	%			
NOAA	27	CH03-03	CH03-03	0-10 cm		72	%			
NOAA	28	CH03-04	CH03-04	0-10 cm		73	%			
NOAA	296	WST08-01	WST08-01	0-10 cm		64	%			
NOAA	297	WST08-02	WST08-02	0-10 cm		70	%			
NOAA	298	WST08-03	WST08-03	0-10 cm		74	%			
NOAA	299	WST08-04	WST08-04	0-10 cm		74	%			
Plant 2 RFI-2b	498	DUW83-0000	SD2B-DUW83-0000		Silt	63	%			
EPA SI	794	DR228-0000	SD-DR228-0000	0-10 cm		69	%			
EPA SI	795	DR229-0000	SD-DR229-0000	0-10 cm		57	%			
EPA SI	796	DR230-0000	SD-DR230-0000	0-10 cm	Silt	72	%			
EPA SI	801	DR235-0000	SD-DR235-0000	0-10 cm	Silt	66	%			
PSSDA98	6642	S1	S1	0-2 ft	Silt	39.4	%			
PSSDA98	6643	S2	S2	0-2 ft	Silt	63.7	%			
a Total solids a	are wet weig	ght			Q - Qualifiers					
dw - Dry weight					J - Estimate					-
OC - Organic c		alized			U - Undetect					
DET - Detected							1			
			also provide datset in S	sedQual for	mat					
Bold values in							-			
Bold and Italia	izea values	incicate CSL exc	eeaance							



APPENDIX E: UPLAND DATA

FINAL

APPENDIX E. UPLAND DATA

Table E-1.	Summary of upland sampling data	E-2
Table E-2.	T-117 groundwater data from 2003	E-3
Table E-3.	Removal action soil data from 1999	E-5
Figure E-1.	Soil removal grids and sampling locations for data in Tables E-2 and E-4 (Onsite 2000b)	E-6
Table E-4.	Focused feasibility study groundwater data from 1997	E-7
Table E-5.	Focused site characterization soil results from 1997	E-8
Table E-6.	Soil data from 1995	E-11
Table E-7.	Site inspection soil data from 1994	E-11
Table E-8.	Site inspection groundwater and seep water data from 1994	E-11
Table E-9.	Site hazard assessment soil data from 1991	E-12
Table E-10.	Site hazard assessment groundwater/product data from 1991	E-12
Table E-11.	Surface water data from 1984	E-12

Table E-1. Summary of upland sampling data

		Su	RFACE S	SOIL	Subs	SURFACE	SOIL	Sur	FACE W	ATER	GR	OUNDWA	ATER	REFLECTS
Source/Investigation	TABLE Number	PCBs	PAH	OTHER	PCBs	PAH	OTHER	PCBs	PAH	OTHER	PCBs	PAH	OTHER	CURRENT CONDITIONS?
Onsite 2003; groundwater sampling	E-2										Х	Х	(TPH)	YES
Onsite 2000; PCB soil removal	E-3				Х									YES
SECOR; 1998. Focused Feasibility Study	E-4										Х		(TPH)	NO
SECOR 1997;. Site Characterization Report	E-5				Х	Х	(TPH)							NO
E&E 1995; soil sampling	E-6 and E-7	X ^a												NO
URS 1994; Site Inspection	E-8 and E-9	Х	Х		х	Х		Х			Х	Х		NO
Ecology 1991; Site Hazard Assessment	E-10				Х	Х					Х			NO
Metro 1984; surface water data	E-11													NO

Sampling depth unknown; could include subsurface soil.

TPH – total petroleum hydrocarbon

Table E-2. T-117 groundwater data from 2003

			MW	/-01	MW-01	l (Dup)	MW	/-02	MW	-03	MW	-04
ANALYTE	METHOD	UNITS	RESULT	PQL	RESULT	PQL	RESULT	PQL	RESULT	PQL	RESULT	PQL
ТРН												
TPH-gas	NWTPH-Gx/BTEX	μg/L	nd	100.0	nd	100.0	nd	100.0	nd	100.0	nd	100.0
Benzene	NWTPH-Gx/BTEX	μg/L	nd	1.0	nd	1.0	nd	1.0	nd	1.0	nd	1.0
Toluene	NWTPH-Gx/BTEX	μg/L	nd	1.0	nd	1.0	nd	1.0	nd	1.0	nd	1.0
Ethyl benzene	NWTPH-Gx/BTEX	μg/L	nd	1.0	nd	1.0	nd	1.0	nd	1.0	nd	1.0
m,p-xylene	NWTPH-Gx/BTEX	μg/L	nd	1.0	nd	1.0	nd	1.0	1.3	1.0	nd	1.0
o-xylene	NWTPH-Gx/BTEX	μg/L	nd	1.0	nd	1.0	nd	1.0	nd	1.0	nd	1.0
TPH-diesel	NWTPH-Dx	mg/L	nd	0.26	nd	0.26	nd	0.26	0.70	0.27	nd	0.30
TPH-lube oil	NWTPH-Dx	mg/L	nd	0.42	nd	0.41	nd	0.42	1.4	0.44	nd	0.48
PAH												
Naphthalene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	nd	0.11	nd	0.11
2-Methylnaphthalene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	nd	0.11	nd	0.11
1-Methylnaphthalene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	0.15	0.11	nd	0.11
Acenaphthylene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	nd	0.11	nd	0.11
Acenaphthene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	0.39	0.11	nd	0.11
Fluorene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	1.6	0.11	nd	0.11
Phenanthrene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	nd	0.11	nd	0.11
Anthracene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	nd	0.11	nd	0.11
Fluoranthene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	nd	0.11	nd	0.11
Pyrene	EPA 8270C/SIM	μg/L	nd	0.099	nd	0.097	nd	0.096	nd	0.11	nd	0.11
Benzo[a]anthracene	EPA 8270C/SIM	μg/L	nd	0.0099	nd	0.0097	nd	0.0096	0.016	0.011	nd	0.011
Chrysene	EPA 8270C/SIM	μg/L	nd	0.0099	nd	0.0097	nd	0.0096	0.10	0.011	nd	0.011
Benzo[b]fluoranthene	EPA 8270C/SIM	μg/L	nd	0.0099	nd	0.0097	nd	0.0096	0.013	0.011	nd	0.011
Benzo[k]fluoranthene	EPA 8270C/SIM	μg/L	nd	0.0099	nd	0.0097	nd	0.0096	nd	0.011	nd	0.011
Benzo[a]pyrene	EPA 8270C/SIM	μg/L	nd	0.0099	nd	0.0097	nd	0.0096	nd	0.011	nd	0.011
Indeno[1,2,3-c,d]pyrene	EPA 8270C/SIM	μg/L	nd	0.0099	nd	0.0097	nd	0.0096	nd	0.011	nd	0.011

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			MW	/-01	MW-01	(Dup)	MW	-02	MW-	-03	MW-	-04
ANALYTE	METHOD	Units	RESULT	PQL	RESULT	PQL	RESULT	PQL	RESULT	PQL	RESULT	PQL
Dibenz[a,h]anthracene	EPA 8270C/SIM	μg/L	nd	0.0099	nd	0.0097	nd	0.0096	nd	0.011	nd	0.011
Benzo[g,h,i]perylene	EPA 8270C/SIM	μg/L	nd	0.0099	nd	0.0097	nd	0.0096	nd	0.011	nd	0.011
PCBs												
Aroclor 1016	EPA 8082	μg/L	nd	0.051	nd	0.049	nd	0.050	nd	0.053	nd	0.051
Aroclor 1221	EPA 8082	μg/L	nd	0.051	nd	0.049	nd	0.050	nd	0.053	nd	0.051
Aroclor 1232	EPA 8082	μg/L	nd	0.051	nd	0.049	nd	0.050	nd	0.053	nd	0.051
Aroclor 1242	EPA 8082	μg/L	nd	0.051	nd	0.049	nd	0.050	nd	0.053	nd	0.051
Aroclor 1248	EPA 8082	μg/L	nd	0.051	nd	0.049	nd	0.050	nd	0.053	nd	0.051
Aroclor 1254	EPA 8082	μg/L	nd	0.051	nd	0.049	nd	0.050	nd	0.053	nd	0.051
Aroclor 1260	EPA 8082	μg/L	nd	0.051	nd	0.049	nd	0.050	nd	0.053	nd	0.051

Source: Onsite (2003) nd - not detected at PQL

PQL - Practical Quantitation Limit

See Appendix A in Onsite (2003) for flags and data qualifiers

Table E-3. Removal action soil data from 1999

	SAMPLE	LOCATION	D EPTH	PCB	(mg/kg) ^a	
SAMPLE ID No.	DATE	(see Fig E-1)	(ft bgs)	TEG ^b	ONSITE C	COMMENTS/NOTES
UC1-0.2	10/01/99	utility cdr	0.2-0.5	_	13	
UC1-0.5	10/01/99	utility cdr	0.5-1.0	_	9	
UC2-0.2	10/01/99	utility cdr	0.2-0.5	_	2.6	
UC2-0.5	10/01/99	utility cdr	0.5-1.0	_	0.77	
UC3-0.2	10/01/99	utility cdr	0.2-0.5	_	15	
UC3-0.5	10/01/99	utility cdr	0.5-1.0	_	9.7	
UC4-0.2	10/01/99	utility cdr	0.2-0.5	_	14	dup split of UC3-0.2
SG-W2-4.5	11/04/99	W2	4.5	nd	nd	
SG-W2A-5.5	11/04/99	W2	4.5	nd	nd	
SG-W2B-5.5	11/04/99	W2	5.5	nd	nd	dup split of W2A-5.5
SG-W2C-5.5	11/04/99	W2	5.5	nd	nd	
SG-B4SE-4.0	11/05/99	B4	4.0	7.18	6.0	
SG-B4SW-4.0	11/05/99	B4	4.0	50.0	4.0	
SG-MASS03-4.0	11/05/99	MASS03	4.0	nd	nd	
SG-MASS04-4.0	11/05/99	MASS04	4.0	nd	nd	dup split of MASS03-4.0
SG-D3-4.0	11/05/99	D3	4.0	0.71	0.82	
SG-F4-2.5	11/08/99	F4	2.5	22.2	34	
SG-L4-2.5	11/08/99	L4	2.5	16.3	24	dup split of F4-2.5
SG-A2SW-3.0	11/08/99	A2	3.0	146	130	
SG-A2-3.5	11/08/99	A2	3.5	nd	0.22	
SG-A2SW-5.0	11/08/99	A2	5.0	nd	0.28	
SG-B1-4.0	11/09/99	B1	4.0	42.7	90	
SG-D3-5.5	11/09/99	D3	5.5	nd	0.81	
SG-DITCH02-1.5	12/13/99	DITCH02	1.5	21.1	_	TEG dup: 18.1 mg/kg

Source: Onsite (2000b)

W2 = grid MW2, F4 = MW4 vicinity, L4 is duplicate of F4.

TEG - Transglobal Environmental Geosciences Northwest Inc. (mobile laboratory)

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Aroclor 1260 was the only Aroclor detected in all analyses.

TEG Mobile Laboratory: PQL for each Aroclor = 0.50 mg/kg

Onsite Environmental Laboratory: PQL for each Aroclor = 0.060 mg/kg

⁻ not analyzed

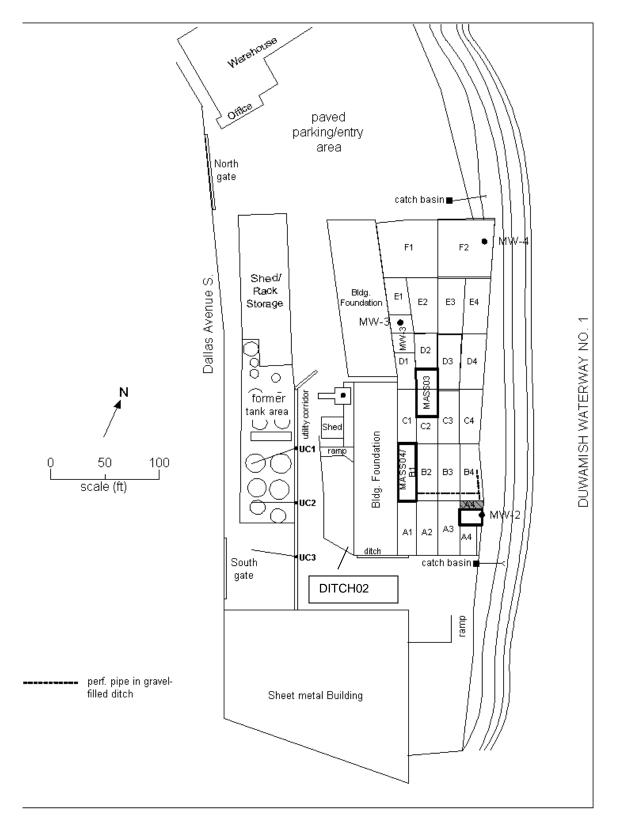


Figure E-1. Soil removal grids and sampling locations for data in Tables E-2 and E-4 (Onsite 2000b)

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Table E-4. Focused feasibility study groundwater data from 1997

SAMPLE IDENTIFICATION	MONITORING WELL	SAMPLING DATE	PCBs AROCLOR 1260 (µg/L)	PAH ^a (µg/L)	TSS (mg/L)	DIESEL RANGE HYDROCARBONS (mg/L)	HEAVY OIL RANGE HYDROCARBONS (mg/L)
MW-1-797	MW-01	07/09/97	<0.100	nd	5	<0.250	<0.500
MW-1-1097	MW-01	10/31/97	<0.100	nd	5	<0.250	<0.500
MW-1-0198	MW-01	01/27/98	<0.2	nd	<5	<0.250	<0.500
MW-1-0498	MW-01	04/29/98	<0.2	nd	6	<0.250	<0.500
MW-2-797	MW-02	07/09/97	0.561	nd	450	<0.250	<0.500
MW-2-1097	MW-02	10/31/97	<0.100	nd	14	<0.250	<0.500
MW-2-0198	MW-02	01/27/98	12	nd	32	<0.250	<0.500
MW-2-0498	MW-02	04/30/98	<0.2	nd	68	<0.250	<0.500
MW-5-0498	MW-02	04/30/98	<0.2	nd	6	<0.250	<0.500
MW-3-797	MW-03	07/09/97	54.3	nd	23	0.258	<0.500
MW-30-797 ^b	MW-03	07/09/97	21.4	nd	8.0	<0.250	<0.500
MW-3-1097	MW-03	10/30/97	0.272	1.47	25	<0.250	<0.500
MW-30-1097 ^b	MW-03	10/30/97	0.376	2.73	14	<0.250	<0.500
MW-3-0198	MW-03	01/27/98	1.1	nd	<5	<0.250	<0.500
MW-30-0198 ^b	MW-03	01/27/98	4.7	nd	<5	<0.250	<0.500
MW-3-0498	MW-03	04/30/98	1.1	nd	14	<0.250	5.9
MW-4-797	MW-04	07/09/97	0.733	nd	28.0	<0.250	<0.500
MW-4-1097	MW-04	10/30/97	<0.100	nd	33.0	<0.250	<0.500
MW-4-0198	MW-04	01/27/98	<0.2	nd	<5	<0.250	<0.500
MW-4-0498	MW-04	04/30/98	<0.2	nd	<5	<0.250	<0.500

Source: SECOR (1998b)

nd - no PAH compounds detected

EPA Method 3520B/8310. See laboratory reports for concentrations and detection limits for individual PAH compounds.

Duplicate of MW-3

Table E-5. Focused site characterization soil results from 1997

SAMPLE LOCATION	SAMPLE DEPTH (ft)	PCBs ^a AROCLOR 1260 ^a (mg/kg)	ACENAPHTHENE (mg/kg)	Benzo(a)- anthracene (mg/kg)	Benzo(A)-PYRENE (mg/kg)	Benzo(B)- FLUORANTHENE (mg/kg)	Benzo(k)- FLUORANTHENE (mg/kg)	CHRYSENE (mg/kg)	Dibenzo(a,+)- anthracene (mg/kg)	FLUORANTHENE (mg/kg)	PHENANTHRENE (mg/kg)	Pyrene (mg/kg)	UNKNOWN HEAVY FUEL OIL (mg/kg)	HEAVY OIL RANGE HYDROCARBONS (mg/kg)	Unknown Lube Oil (mg/kg)
SB-UA-3	3.0	0.061	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	<25.0	56.8 J	<25.0
SB-UA-4.5	4.5	17.6	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	<25.0	1980 J	<25.0
SB-UB-3	3.0	0.0854 J	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	<25.0	<25.0	<25.0
SB-UB-4.5	4.5	0.0913	<0.150	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.150	<0.0100	<25.0	<25.0	<25.0
SB-UC-3	3.0	0.175	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	<25.0	32.2 J	<25.0
SB-UC-4.5	4.5	2.14	<0.150	0.0133 J	0.0407 J	<0.0100	<0.0100	0.107	<0.0100	<0.0100	<0.150	<0.0100	253 J	<25.0	<25.0
HB-UD8	0.8	433	_	_	_	_	_	_	_	_	_	_	6390	<250	<25.0
SB-UE	<0.25	11.1	_	_	_	_	_	_	_	_	_	_	<25.0	<250	3440
SB-A15	0.5	31.5	<6.15	<0.410	<0.410	<0.410	<0.410	1.02 J	<0.410	0.522 J	<6.15	0.750 J	<25.0	3110 J	<25.0
SB-A1-2	2.0	33.7	<6.15	0.508 J	<0.410	<0.410	<0.410	1.77 J	<0.410	0.755 J	<6.15	<0.410	<25.0	25400 J	<25.0
SB-A2-2	2.0	0.385	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	<25.0	546 J	<25.0
SB-A2-3.5	4.8	2.9	<252	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<16.8	<252	<16.8	55100 J	<1250	<25.0
SB-A3-2	2.0	0.619	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	442	<25.0	<25.0
SB-A3-3.5	4.8	0.268 J	<6.15	<0.410	<0.410	<0.410	<0.410	0.724 J	<0.410	<0.410	<6.15	<0.410	<25.0	2560 J	<25.0
SB-A45	0.5	51.4	<6.15	0.632 J	<0.410	<0.410	<0.410	1.08 J	<0.410	<0.410	<6.15	<0.410	1490	<250	<25.0
SB-A4-3.5	3.5	0.726	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	<25.0	124 J	<25.0
SB-B1-2	2.0	1.49	<0.150	<0.0100	<0.0100	<0.0100	<0.0100	0.0265 J	<0.0100	<0.0100	<0.150	<0.0122 J	<25.0	152 J	<25.0
SB-B1-3.5	4.5	0.344	<6.15	<0.410	<0.410	<0.410	<0.410	0.524 J	<0.410	<0.410	<6.15	<0.410	2100 J	<250 J	<25.0 J
SB-B2-2	2.0	0.433	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	179 J	<25.0	<25.0
SB-B2-3.5	3.5	0.221	<0.150 J	<0.0111 J	<0.0100 J	<0.0100 J	<0.0100 J	<0.0100 J	<0.0100 J	<0.0100 J	<0.150 J	<0.0158 J	318 J	<25.0	<25.0
SB-B3-2	2.0	0.0792	<6.15	<0.410	<0.410	<0.410	<0.410	0.834	<0.410	<0.410	<6.15	<0.416 J	<25.0	193 J	<25.0

SAMPLE LOCATION	SAMPLE DEPTH (ft)	PCBs ^a AROCLOR 1260 ^a (mg/kg)	ACENAPHTHENE (mg/kg)	Benzo(a)- anthracene (mg/kg)	Benzo(a)-Pyrene (mg/kg)	Benzo(B)- FLUORANTHENE (mg/kg)	Benzo(ĸ)- FLUORANTHENE (mg/kg)	CHRYSENE (mg/kg)	Dibenzo(a,+)- anthracene (mg/kg)	FLUORANTHENE (mg/kg)	PHENANTHRENE (mg/kg)	Pyrene (mg/kg)	UNKNOWN HEAVY FUEL OIL (mg/kg)	HEAVY OIL RANGE HYDROCARBONS (mg/kg)	UNKNOWN LUBE OIL (mg/kg)
SB-B3-3.5	3.5	6.8	<0.150	<0.0287 J	<0.0126 J	<0.0100	<0.0100	0.101 J	<0.0100	0.0344 J	<0.150	0.0471 J	39900 J	<1250	<25.0
SB-B4-2	2.0	85.1	<6.15	<0.410	<0.410	<0.410	<0.410	0.742 J	<0.410	<0.410	<6.15	<0.410	12500	<1250	<25.0
SB-B4-3.5	4.8	0.360	<0.150	<0.150	0.085 J	<0.0100	<0.0100	0.0484 J	<0.0100	0.0215 J	<0.150	0.0258 J	<25.0	<25.0	367
SB-B5-2 ^c	2.0	0.124	<252 J	<16.8 J	<16.8 J	<16.8 J	<16.8 J	<16.8 J	<16.8 J	<16.8 J	<252 J	<16.8 J	32000 j	<1250	<25.0
SB-C1-2	2.0	2.42	<6.15	2.21 J	<0.410	<0.410	<0.410	3.93 J	<0.410	<0.410	<6.15	<0.410	15600	<250	<25.0
SB-C1-3.5	3.5	0.77	6.88 J	1.54 J	<0.410	<0.410	<0.410	1.97 J	<0.410	<0.410	<6.15	<0.410	7020 j	<250	<25.0
SB-C2-2	2.0	70.6	<6.15	0.722 J	<0.410	<0.410	<0.410	1.77 J	0.853 J	<0.410	<6.15	<0.410	22300	<1250	<25.0
SB-C2-3.5	3.5	0.0942	<6.15	0.493 J	<0.410	<0.410	<0.410	2.78 J	<0.410	<0.410	<6.15	<0.410	1240 J	<250	<25.0
SB-C3-2	2.0	5.64	<6.15	0.733 J	1.12 J	0.490 J	<0.410	2.17 J	<0.410	2.44 J	<6.15	0.914 J	<25.0	1830 J	<25.0
SB-C3-3.5	3.5	<0.050 J	<0.510	0.0294 J	0.0621 J	0.0210 J	0.0239 J	0.0639 J	<0.0100	0.166 K	<0.150	0.0623 J	40.2 J	<25.0	<25.0
SB-C4-2	2.0	109	<6.15	<0.410	<0.410	<0.410	<0.410	0.743 J	<0.410	<0.410	<6.15	<0.410	2580	<250	<25.0
SB-C4-3.5	3.5	18.5	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	1240	<25.0	<25.0
SB-C5-3.5 ^d	3.5	<0.050	<6.15	0.930 J	<0.410	<0.410	<0.410	1.23 J	<0.410	<0.410	<6.15	<0.410	10400 J	<250	<25.0
SB-D15	0.5	41.2	<6.15	<0.410	<0.410	<0.410	<0.410	0.846 J	<0.410	<0.410	<6.15	<0.410	3320 J	<250 J	<25.0 J
SB-D1-3.5	3.5	0.162 J	<6.15	<0.410	<0.410	<0.410	<0.410	0.419 J	<0.410	<0.410	<6.15	<0.410	76.6 J	<25.0 J	<25.0 J
SB-D25	0.5	29.6 J	<252 J	<16.8 J	<16.8 J	<16.8 J	<16.8 J	<16.8 J	<16.8 J	<16.8 J	<252 J	<16.8 J	63500	<250	<25.0
SB-D2-3.5	3.5	<0.050	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	40.3	<25.0	<25.0
SB-D35	0.5	18.3	<0.150	<0.150	<0.0100	<0.0100	<0.0100	0.0141 J	<0.0100	<0.0100	<0.150	0.0102 J	<25.0	<25.0	<25.0
SB-D3-3.5	3.5	531	<6.15	<0.410	0.915 J	<0.410	<0.410	2.48 J	<0.410	1.88 J	<6.15	2.50 J	8660	<250	<25.0
SB-D45	0.5	15.3	<3.08 J	<0.205 J	<0.205 J	<0.205 J	<0.205 J	<0.205 J	<0.205 J	<0.205 J	<3.08 J	<0.205 J	1090	<25.0 J	<25.0
SB-D4-3.5	3.5	0.107	<0.150	0.154 J	0.0342 J	<0.0100	0.0115 J	0.101 J	<0.0100	0.0800 J	<0.150	0.0928 J	<25.0	<25.0	<25.0
SB-E15	0.5	268	<6.15	0.497 J	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	1380	<25.0	<25.0

SAMPLE LOCATION	SAMPLE DEPTH (ft)	PCBs ^a AROCLOR 1260 ^a (mg/kg)	AcenaPнтнеne (mg/kg)	Benzo(a)- anthracene (mg/kg)	Benzo(A)-Pyrene (mg/kg)	Benzo(B)- FLUORANTHENE (mg/kg)	Benzo(k)- FLUORANTHENE (mg/kg)	CHRYSENE (mg/kg)	DIBENZO(A,H)- ANTHRACENE (mg/kg)	FLUORANTHENE (mg/kg)	PHENANTHRENE (mg/kg)	Pyrene (mg/kg)	UNKNOWN HEAVY FUEL OIL (mg/kg)	HEAVY OIL RANGE HYDROCARBONS (mg/kg)	Unknown Lube Oil (mg/kg)
SB-E1-3.5	3.5	1.66 J	<0.150	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.0100	<0.150	<0.0100	167	<25.0	<25.0
SB-E25	0.5	64.1 J	<6.15	<0.410	<0.410	<0.410	<0.410	0.590 J	<0.410	0.435 J	<6.15	0.608 J	953	<25.0	<25.0
SB-E2-3.5	3.5	0.137 J	<0.150	<0.0100	0.0164 J	<0.0100	<0.0100	0.0319 J	<0.0100	0.0207 J	<0.150	0.0294 J	<25.0	<25.0	<25.0
SB-E35	0.5	110 J	<0.150	0.0279 J	0.0891 J	0.0299 J	0.0252 J	0.154 J	<0.0100	0.113 J	<0.150	0.177 J	111	<25.0	<25.0
SB-E3-3.5	3.5	0.0565 J	<0.150	0.0207 J	0.0358 J	0.0140 J	0.0117 J	0.0841 J	<0.0100	0.0831 J	<0.150	0.0867 J	<25.0	<25.0	<25.0
SB-E4-2	2.0	0.252 J	<0.150	0.0283 J	0.0357 J	0.0272 J	0.0147 J	0.0646 J	<0.0100	0.0704 J	0.378 J	0.0791 J	<25.0	1090	<25.0
SB-E4-3.5	3.5	0.149 J	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	635	<25.0	<25.0
SB-E5-2 ^e	2.0	101 J	<6.15	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<0.410	<6.15	<0.410	1650	<25.0	<25.0
MW-4-1	1.0	183 J	<6.15	<0.410	<0.410	<0.410	<0.410	0.745 J	<0.410	0.573 J	<6.15	<0.417 J	551	<25.0	<25.0
DITCH-01-0397	<1.0	40	<0.1	0.05	0.09	0.05	0.02	0.02	<0.01	0.07	0.05	<0.1	2100	7600	_
DITCH-02-797	0.5	63.9	<6.30 J	<0.420 J	<0.420 J	<0.420 J	<0.420 J	<0.410 J	<0.820 J	<6.30 J	<6.30 J	<0.420 J	770	1900	_
DITCH-03-797 ^f	0.5	59	<1.95 J	0.862 J	1.08 J	0.336 J	0.229 J	1.06 J	<0.150 J	1.62 J	<1.95 J	2.01 J	nr	nr	nr

Source: SECOR (1997)

- not quantified

nr - not reported in source document

- Polychlorinated biphenyls (PCB) analysis by EPA Method 8081
- Samples Ditch 02-797 and Ditch-03-797 PCB results reported as Aroclor 1262
- Duplicate of sample SB-B3-2
- Duplicate of sample SB-C1-3.5
- Duplicate of sample SB-E4-2
- Duplicate of sample Ditch-02-797

Table E-6. Soil data from 1995

SAMPLE NAME	SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH (ft bgs)	PCB CONCENTRATION (mg/kg)
T5090001	North of slab area (sediment)	1995	unknown	11 (Aroclor 1260)
T5090003	Near north storm drain	1995	unknown	23 (Aroclor 1260)
T5090004	NE of slab area	1995	unknown	15 (Aroclor 1260)
T5090005	NE of railroad tank car	1995	unknown	13 (Aroclor 1260)
T5090006	Near railroad tank car	1995	unknown	40 (Aroclor 1260)
T5090007	NE of former maintenance bldg.	1995	unknown	26 (Aroclor 1260)
T5090008	Near drainage ditch	1995	unknown	17 (Aroclor 1260)

Source: EMCON (1996), Table 3-1; collected by E&E and compiled by EMCON from transmittal of data from EPA

Table E-7. Site inspection soil data from 1994

SAMPLE NAME	SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH (ft bgs)	PCB CONCENTRATION (mg/kg)
MASS02	On-site ditch	06/22/94	0 to 0.5	120 (Aroclor 1260)
MASS03	Holding pond	06/22/94	0 to 0.5	23 (Aroclor 1260)
MASS04	Railroad tank car	06/22/94	0 to 0.5	18 (Aroclor 1260)
MASB07	On-site ditch	06/22/94	1.5 to 2.0	1.6 (Aroclor 1260)
MASB08	Holding pond	06/22/94	1.5 to 2.0	110 (Aroclor 1260)
MASB09	Railroad tank car	06/22/94	1.5 to 2.0	180 (Aroclor 1260)

Source: EMCON (1996), Table 3-1; collected by URS in 1994

Table E-8. Site inspection groundwater and seep water data from 1994

SAMPLE NAME	SAMPLE LOCATION	SAMPLE DATE	PCB CONCENTRATION (µg/L)	Pyrene (µg/L)	DIETHYLPHTHALATE (µg/L)
MAMW01	MW-01	06/22/94	1.2 J (Aroclor 1260)	0.53 U	0.93 J
MAMW02	MW-02	06/22/94	0.99 (Aroclor 1260)	0.48 U	0.48 U
MAMW04	MW-02 (Duplicate)	06/22/94	2.3 UJ (Aroclor 1260)	0.52 U	0.11 J
MAMW03	MW-03	06/22/94	140 (Aroclor 1260)	2.5 J	12.3 U
MARS05	large river seep	06/22/94	0.25 U (Aroclor 1260)	0.53 U	0.53 U

Source: EMCON (1996); collected by URS in 1994

U = compound not detected

J = value is an estimate.

UJ = analyte was not detected above the reported sample quantitation limit; however, the reported quantitation limit is an estimate.

FINAL

Table E-9. Site hazard assessment soil data from 1991

SAMPLE NAME	SAMPLE LOCATION	SAMPLE DATE	SAMPLE DEPTH (ft bgs)	PCB CONCENTRATION (mg/kg)
MW01-1.5	MW-1	05/01/91	1.5	1.5 and 1.2 (Aroclors 1248 and 1260))
MW01-3.0	MW-1	05/01/91	3.0	24 (Aroclor 1260)
MW02-1.5	MW-2	05/01/91	1.5	370 (Aroclor 1260)
MW02-3.0	MW-2	05/01/91	3.0	600 (Aroclor 1260)
MW02-4.5	MW-2	05/01/91	4.5	2.7 (Aroclor 1260)
MW03-1.5	MW-3	05/02/91	1.5	170 (Aroclor 1260)
MW03-3.0	MW-3	05/02/91	3.0	50 (Aroclor 1260)
MW03-4.0	MW-3	05/02/91	4.0	6.2 (Aroclor 1260)
MW03-4.5	MW-3	05/02/91	4.5	1.8 (Aroclor 1260)

Source: EMCON (1996), Table 3-1; collected by Parametrix and SAIC in 1991.

Table E-10. Site hazard assessment groundwater/product data from 1991

SAMPLE NAME	SAMPLE LOCATION	SAMPLE DATE	PCB CONCENTRATION (µg/L)	PAH Concentration (µg/L)
MW01-A	MW-1	1991	1.8 (Aroclor 1260)	not reported
MW01-B	MW-1	1991	1.7 (Aroclor 1260)	not reported
MW02	MW-2	1991	11 (Aroclor 1260)	not reported
MW03-A	MW-3	1991	77 (Aroclor 1260)	110 (naphthalene)
MW03-B	MW-3	1991	38 (Aroclor 1260)	60 J (naphthalene)
Buried tank car	buried tank car	1991	ND (Aroclor 1260)	not reported
Vintage oil tank	vintage oil tank	1991	48,000 J (Aroclor 1260)	not reported

Source: Parametrix (1991)

Table E-11. Surface water data from 1984

SAMPLE NAME	SAMPLE LOCATION	SAMPLE DATE	PCB Concentration (µg/L)
unknown	"holding pond"	unknown	23
unknown	site outfall	unknown	6,800

Source: Results of Metro 1984 sampling as reported in EMCON (1996)